

**WOMEN WITH ANOREXIA NERVOSA AND BULIMIA  
NERVOSA: INDIVIDUAL AND FAMILY CHARACTERISTICS,  
WITH PARTICULAR EMPHASIS ON PERFECTIONISM**

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## CONTENTS

	PAGE
LIST OF TABLES	i
LIST OF FIGURES	v
ACKNOWLEDGEMENTS	vi
ABSTRACT	1
CHAPTER	
1 INTRODUCTION	3
1.1 GENERAL INTRODUCTION	3
1.2 DEFINITION	4
1.3 HISTORICAL OVERVIEW	6
1.3.1 The Emergence of Anorexia and Bulimia Nervosa	6
1.3.2 Social Context	9
1.4 EPIDEMIOLOGY OF ANOREXIA AND BULIMIA NERVOSA	10
1.4.1 Prevalence	10
1.4.2 Mortality Rate	13
2 SOCIAL LEARNING THEORY	15
2.1 WHAT IS SOCIAL LEARNING THEORY?	15
2.2 HISTORICAL OVERVIEW	16
2.3 BANDURA AND SOCIAL LEARNING THEORY	18
2.3.1 Bandura and Colleagues' Emphasis on Modelling in Social Learning Theory	18
2.3.2 Self-Efficacy	26
2.3.3 Reciprocal Determinism	28
2.4 PATTERSON AND OTHERS AND SOCIAL LEARNING THEORY	32
2.4.1 Reciprocity and Coercion	33
2.5 CONCLUSION	41

<b>3</b>	<b>SOCIO-CULTURAL, FAMILY AND INDIVIDUAL FACTORS IN THE AETIOLOGY OF ANOREXIA AND BULIMIA NERVOSA</b>	<b>45</b>
3.1	GENERAL PERSPECTIVE	45
3.2	SOCIO-CULTURAL FACTORS	46
3.2.1	Introduction	46
3.2.2	Values of Western Society	46
3.2.3	Beyond Sociocultural Factors	55
3.3	FAMILY FACTORS	55
3.3.1	Introduction	55
3.3.2	Specific Family Factors	56
3.3.3	Family Interaction Patterns	67
3.4	INDIVIDUAL FACTORS	77
3.4.1	Personal and Developmental Factors	78
3.4.2	Cognitive and Psychological Factors	95
3.5	SUMMARY	116
3.5.1	Socio-Cultural Factors	116
3.5.2	Family Factors	117
3.5.3	Individual Factors	119
<b>4</b>	<b>FAMILY STUDIES OF ANOREXIA AND BULIMIA NERVOSA</b>	<b>124</b>
4.1	INTRODUCTION	124
4.2	MINUCHIN AND ASSOCIATES	126
4.3	SELVINI-PALAZZOLI AND VIARO	134
4.4	ROOT, FALLON AND FRIEDRICH	136
4.4.1	The Bulimic Family System	136
4.4.2	The Family Life-Cycle in the Development of Bulimia Nervosa	142

4.5	CRITICISM OF FAMILY MODELS OF ANOREXIA AND BULIMIA NERVOSA	146
4.5.1	Criticism of Minuchin et al. (1978)	146
4.5.2	Criticism of Selvini-Palazzoli and Viaro (1988)	147
4.5.3	Common Threads in Family Models of the Development of Anorexia Nervosa	149
4.5.4	Comparison of Family Models of Anorexia and Bulimia Nervosa, and, Criticism of Root et al. (1986)	151
4.6	CONCLUSION	154
5	THE NATURE OF PERFECTIONISM, AND ITS ASSOCIATION WITH FAMILY INTERACTION AND WITH EATING DISORDERS	156
5.1	INTRODUCTION	156
5.2	WHAT IS PERFECTIONISM?	158
5.2.1	Definitions of Perfectionism	158
5.2.2	The Specificity of Perfection	159
5.2.3	Dysfunctional Versus Healthy Perfectionism	160
5.2.4	The Social Aspect of Perfectionism	162
5.3	HOW PERFECTIONISM IS MEASURED	163
5.3.1	Unidimensional Perfectionism Scales	163
5.3.2	Multidimensional Perfectionism Scales	165
5.4	A PERFECTIONISTIC PERSONALITY	175
5.4.1	Development of a Perfectionistic Personality	175
5.4.2	The Effects of a Perfectionistic Personality	177
5.4.3	How Dysfunctional Perfectionism Interacts with Other Aspects of the Person	180
5.5	THE ASSOCIATION BETWEEN DYSFUNCTIONAL PERFECTIONISM AND EATING DISORDERS	186



5.5.1	Parallels in Relationships of Dysfunctional Perfectionists and Women with Eating Disorders	186
5.5.2	Dysfunctional Perfectionism in Women with Eating Disorders	189
5.6	PARENTAL INFLUENCES ASSOCIATED WITH DYSFUNCTIONAL PERFECTIONISM IN THE DEVELOPMENT OF EATING DISORDERS	196
5.6.1	Perfectionism in Family: General	196
5.6.2	Perfectionism about Physical Appearance	197
5.6.3	Perfect Family Image	198
5.6.4	Parental Self-Esteem and Perfectionism	199
5.6.5	High Parental Expectations	201
5.6.6	High Parental Criticism	202
5.7	WHY DO EATING DISORDERS DEVELOP?	205
6	RATIONALE FOR THIS STUDY, AND, A MODEL FOR THE DEVELOPMENT OF ANOREXIA AND BULIMIA NERVOSA	208
6.1	RATIONALE FOR THIS STUDY	208
6.1.1	Multidimensional Perfectionism, Family Interaction and Eating Disorders	208
6.2	AIMS OF THIS STUDY	209
6.3	MODEL: A DYSFUNCTIONAL PERFECTIONISM PATH FOR THE DEVELOPMENT OF ANOREXIA AND BULIMIA NERVOSA	211
6.3.1	Introduction	211
6.3.2	The Model	212
6.3.3	Beyond the Model to an Eating Disorder	222
7	METHOD	226
7.1	PARTICIPANTS	226

7.2	PROCEDURE	228
	7.2.1 Collection of Data	228
	7.2.2 Response Rate	229
7.3	INSTRUMENTS, RATIONALE FOR THEIR USE, AND, HYPOTHESES	231
	7.3.1 Eating Disorder Inventory-2	232
	7.3.2 Beck Depression Inventory	236
	7.3.3 Multidimensional Perfectionism Scale	239
	7.3.4 Setting Conditions for Anorexia Nervosa Scale	241
	7.3.5 Tridimensional Personality Questionnaire	243
	7.3.6 Parental Bonding Instrument	250
	7.3.7 Family Environment Scale	252
	7.3.8 Correlational Hypotheses	255
7.4	DATA ANALYSES	260
8	RESULTS	263
8.1	INTRODUCTION	263
8.2	SECTION ONE: COMPARISONS WITH OTHER STUDIES AND ANALYSES OF BETWEEN-GROUP DIFFERENCES	264
	8.2.1 Comparisons With Other Studies	264
	8.2.2 Analyses of Between-Group Differences	300
8.3	SECTION TWO: CORRELATIONS	303
	8.3.1 Perfectionism and Discontent Correlations	303
	8.3.2 BDI Covariate Test Correlations	320
8.4	8.4 SECTION THREE: MULTIVARIATE ANALYSES	324
	8.4.1 Multivariate Analyses of Variance	324
	8.4.2 Multivariate Analyses of Covariance	330
	SECTION FOUR: DISCRIMINANT FUNCTION ANALYSIS	337
8.5	8.5.1 Introduction	337
	8.5.2 Four Group Classification	337

8.5.3 Two Group Classification	339
8.5.4 Classification By Perfectionism Variables	339
8.5.5 Best Discriminating Variables Generally	342
8.5.6 Family Variables	344
8.5.7 DFA of Best Variable Combinations	345
8.5.8 Conclusion	349
<b>9 DISCUSSION AND CONCLUSION</b>	<b>351</b>
9.1 INTRODUCTION	351
9.2 BODY WEIGHT AND PURPOSEFUL WEIGHT REDUCTION	351
9.3 DEPRESSION	354
9.4 EDI-2 MEASURES	357
9.5 DYSFUNCTIONAL PERFECTIONISM	362
9.5.1 What does SCANS Perfectionism Measure?	371
9.5.2 What does SCANS General Dissatisfaction Measure?	375
9.6 TEMPERAMENT	376
9.7 FAMILY FACTORS	393
9.7.1 Parental Bonding	393
9.7.2 Family Environment	402
9.8 LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR RESEARCH	409
9.9 CONCLUSION	417
<b>REFERENCES</b>	<b>427</b>
<b>APPENDICES</b>	
1. A Study: Perfectionism in Women	471
2. Information Letters and Consent Forms for Participants in Studies	502
3. Ethics Committees' Approvals for the Studies	510

# LIST OF TABLES

TABLE	PAGE
1. Hypothesized differences across groups on TPQ.	247
2. Hypothesized correlations for perfectionism measures.	258
3. Hypothesized correlations for discontent measures.	259
4. Demographic and physical characteristics of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	265
5. EDI-SC numbers and percentages for descriptive information of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	266
6. EDI-SC diet and exercise means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	268
7. EDI-SC binge and purge means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), and women with diabetes (D).	269
8. EDI-SC menstruation means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	272
9. EDI-2 means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	273
10. Disordered Eating Index means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	276
11. BDI means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	277

TABLE	PAGE
12. MPS means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	280
13. SCANS mean values, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	284
14. Numbers and percentages scoring above SCANS cut-off scores of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	285
15. TPQ means, SDs, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy (H), and diabetes (D).	287
16. PBI means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	294
17. FES means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	298
18. Correlational matrix of all perfectionism variables by measures of perfectionism, depression, temperament, and family interaction measures (all groups).	304
19. Correlational matrix of all perfectionism variables by measures of perfectionism, depression, temperament, and family interaction measures (anorexia nervosa).	305
20. Correlational matrix of all perfectionism variables by measures of perfectionism, depression, temperament, and family interaction measures (bulimia nervosa).	306
21. Correlational matrix of all perfectionism variables by measures of perfectionism, depression, temperament, and family interaction measures (healthy).	307

TABLE	PAGE
22. Correlational matrix of all perfectionism variables by measures of perfectionism, depression, temperament, and family interaction measures (diabetes).	308
23. Correlation matrix of measures of discontent by measures of discontent, harm avoidance, and family interaction (all groups).	316
24. Correlation matrix of measures of discontent by measures of discontent, harm avoidance, and family interaction (anorexia nervosa).	317
25. Correlation matrix of measures of discontent by measures of discontent, harm avoidance, and family interaction (bulimia nervosa).	317
26. Correlation matrix of measures of discontent by measures of discontent, harm avoidance, and family interaction (healthy).	317
27. Correlation matrix of measures of discontent by measures of discontent, harm avoidance, and family interaction (diabetes).	317
28. Correlations between BDI and EDI-2, TPQ, MPS, SCANS, PBI and FES variables for all groups combined.	321
29. MANOVA statistics for the EDI-2, TPQ, SCANS, MPS, PBI, and FES.	324
30. MANCOVA statistics for the EDI-2, MPS, SCANS, TPQ, PBI, and FES.	330
31. EDI-2 observed means and adjusted means of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	332
32. MPS observed means and adjusted means of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	333

TABLE	PAGE
33. SCANS observed means and adjusted means of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	334
34. TPQ observed means and adjusted means of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	335
35. PBI observed means and adjusted means of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).	336
36. DFA percentages correctly classified by group.	338
37. DFA percentages and numbers correctly classified for perfectionism variables.	340
38. DFA percentages and numbers correctly classified according to best discriminating variables in the eating disordered group.	343
39. DFA classifications for main and replication data sets.	346
40. DFA Classifications for main and replication data sets for the 7 and 4 variable combinations.	348
41. MPS and BDI means for Project One group compared to healthy and diabetes group means of the main study.	472

## LIST OF FIGURES

FIGURE	PAGE
1. A model of possible precursors to anorexia and bulimia nervosa via a dysfunctional perfectionism pathway.	215
2. Percentages in eating disorder categories by group.	277
3. BDI frequency distribution of scores for women with diabetes.	278
4. Percentages in BDI categories by group.	279
5. MPS Doubts about Actions frequency distribution of scores for healthy women.	282
6. Percentages in perfectionism categories by group.	283
7. TPQ NS frequency distributions of scores for women with anorexia nervosa, bulimia nervosa, healthy women, and women with diabetes.	292
8. TPQ HA frequency distributions of scores for women with anorexia nervosa, bulimia nervosa, healthy women, and women with diabetes.	293
9. PBI Maternal Care frequency distributions of scores for women with anorexia nervosa, bulimia nervosa, healthy women, and women with diabetes.	297



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## ABSTRACT

This study investigated socio-cultural, family and individual factors associated with anorexia and bulimia nervosa, with particular emphasis on dysfunctional perfectionism, and adopting a general social learning perspective. Theories of the development of eating disorders were interwoven with theories of the development of perfectionism. A model was proposed for the development of anorexia and bulimia nervosa via a dysfunctional perfectionism pathway.

The 135 participants, aged 18 to 40 years, were women with anorexia nervosa (N=25), bulimia nervosa (N=32), Type 1 diabetes (N= 53, a North Canterbury population-based sample), and healthy women students (N=25). The women with eating disorders were recruited from various treatment centres throughout New Zealand. Participants completed a battery of seven self-report psychometric tests, namely, the Eating Disorder Inventory-2 (EDI-2), Beck Depression Inventory (BDI), Multidimensional Perfectionism Scale (MPS), Setting Conditions for Anorexia Nervosa Scale (SCANS), Tridimensional Personality Questionnaire (TPQ), Parental Bonding Instrument (PBI), and Family Environment Scale (FES).

Analysis of Covariance, using the BDI as a covariate, revealed that, in addition to measures concerned with weight, shape and dieting, both anorexia and bulimia nervosa group means were significantly higher than both healthy and diabetes group means for EDI-2 Interpersonal Distrust and Social Insecurity; MPS Concern over Mistakes, Personal Standards, and Parental Criticism; and TPQ Harm Avoidance, and significantly different from the healthy group mean for MPS Parental Expectations; SCANS Perfectionism; and PBI Maternal Protection, Maternal Care, and Paternal Care. Correlational analyses confirmed hypothesized moderate or strong associations between some perfectionism measures and other characteristics

of women with eating disorders, such as a harm-avoidant temperament, and perceptions of maternal overprotection. Discriminant function analysis revealed seven variables, in combination, that maximally discriminated between eating disordered and non-eating disordered groups: three EDI-2 variables of Drive for Thinness, Ineffectiveness, and Social Insecurity, three MPS subscales of Concern over Mistakes, Personal Standards, and Doubts about Actions, and the BDI. Of the three instruments measuring perfectionism, in this study, only the MPS effectively discriminated between eating disordered and non-eating disordered groups.

Findings indicated the importance of controlling for depression when comparing eating disordered groups with other groups, and that dysfunctional perfectionism is largely independent of the mood of the respondent. Findings suggest that the PBI may be limited by cultural sensitivity. Findings led to questioning of the applicability of the EDI-SC to diabetes groups and of the validity of the Novelty Seeking and Reward Dependence Dimensions of the TPQ.

In concluding that dysfunctional perfectionism is a key personality characteristic of women with anorexia and bulimia nervosa, it is argued that multidimensional measures of perfectionism provide more insight than unidimensional measures into the dysfunctional facets of perfectionism, and that perfectionism per se is not necessarily problematic. Dysfunctional perfectionism may distinguish psychopathology associated with anorexia and bulimia nervosa from numerous other forms of psychopathology, including depression. Although aetiological factors were not assessed in this study, the MPS and PBI, considered in conjunction with the theoretical literature, may provide insight into the development of dysfunctional perfectionism. This has implications for the treatment and prevention of eating disorders.

## CHAPTER ONE

### INTRODUCTION

In the month of July she fell into a total suppression of her monthly courses from a multitude of cares and passions of her mind, but without any symptom of the green-sickness following upon it. From which time her appetite began to abate, and her digestion to be bad; her flesh also began to be flaccid and loose, and her looks pale ... she was wont by her studying at night, and continual pouring upon books, to expose herself both day and night to the injuries of the air ... I do not remember that I did ever in all my practice see one, that was conversant with the living so much wasted with the greatest degree of a consumption (like a skeleton only clad with skin) yet there was no fever, but on the contrary a coldness of the whole body .... only her appetite was diminished, and her digestion uneasy, with fainting fits, which did frequently return upon her (Morton, 1689; cited in Bruch, 1973).

#### 1.1 GENERAL INTRODUCTION

Anorexia nervosa and bulimia nervosa are eating disorders which have attracted considerable theoretical and empirical attention in recent decades. The first chapter of this thesis defines anorexia nervosa and bulimia nervosa, and discusses the history of these disorders and their epidemiology. Chapter Two introduces a social learning perspective. Later chapters discuss socio-cultural, family, and individual factors related to eating disorders, with particular emphasis on perfectionism. The results of an investigation are reported in which individual factors, particularly perfectionism, and family factors were examined in women with anorexia and bulimia nervosa through a series of self-report questionnaires. Women with diabetes and healthy women were included as comparison groups.

As females constitute the majority of cases of anorexia nervosa and bulimia nervosa, all subjects selected for this research were female. Consequently,

when referring to people with eating disorders, this report usually refers to females, rather than males. However this is not intended to deny or ignore the occurrence of eating disorders in the male population.

## 1.2 DEFINITION

Anorexia is defined from Greek, where "an" as a prefix means "absence of", and "orexis" means "appetite" or "desire". Thus anorexia means "absence of appetite". "Nervosa" is derived from the Latin root word "nervus" which can be defined as "imprisoned" or "captured". According to this definition, a person who has anorexia is considered a prisoner of a disordered psychological state (Epling & Pierce, 1991). The definition outlined here has been criticized as not strictly true in that people with anorexia nervosa, rather than suffer a loss of appetite, are considered to maintain a refusal to eat at an appropriate level due to a fear of weight gain.

According to the Diagnostic and Statistical Manual (DSM-III-R; American Psychiatric Association [APA], 1987)\* anorexia nervosa is defined as:

- A. refusal to maintain weight over a minimum normal weight for age, or loss of greater than 15%.
- B. intense fear of gaining weight or becoming fat even though underweight.
- C. disturbance in the way in which one's body weight, size or shape is experienced, and,
- D. in females an absence of at least three consecutive menstrual periods.

In the DSM-IV (APA, 1994) anorexia nervosa is divided into two specific types, "Restricting Type" and "Binge-Eating/Purging Type" to specify the presence or absence of regular binge eating or purging. The "Restricting

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\* Although the DSM-IV (APA, 1994) superseded the DSM-III-R, it had not been published at the time respondents were recruited for this research.

Type" is defined as "during the current episode of Anorexia Nervosa, the person has not regularly engaged in binge-eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas)" (APA, 1994, p. 545). The "Binge-Eating/Purging Type" is defined as "during the current episode of Anorexia Nervosa, the person has regularly engaged in binge-eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas)" (APA, 1994, p. 545).

Bulimia is a term derived from the Greek word "bulimos" or "hunger of an ox". DSM-III-R (APA, 1987) criteria for bulimia nervosa are:

- A. Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time).
- B. A feeling of lack of control over eating behavior during the eating binges.
- C. The person regularly engages in either self-induced vomiting, use of laxatives or diuretics, strict dieting or fasting, or vigorous exercise in order to prevent weight gain.
- D. A minimum average of two binge eating episodes a week for at least three months.
- E. Persistent over concern with body shape and weight. (pp. 68-69).

In the DSM-IV (APA, 1994) bulimia nervosa is divided into two specific types, "Purging Type" and "Nonpurging Type" to specify the presence or absence of purging. The "Purging Type" is defined as, "during the current episode of Bulimia Nervosa, the person has regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas" (APA, 1994, p. 550). "Nonpurging Type" is defined as, "during the current episode of Bulimia Nervosa, the person has used other inappropriate compensatory behaviors, such as fasting or excessive exercise, but has not regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas" (APA, 1994, p. 550).

Although women with binge-eating/purging type anorexia nervosa, similarly to women with normal (or greater) weight bulimia nervosa, often purge following a binge, these two groups of women differ in that women with bulimia nervosa do not suffer radical weight loss and amenorrhoea as a result of their purging behaviour. Women with bulimia nervosa range from being slim to being obese. Like women with anorexia nervosa, women with bulimia nervosa tend to perceive themselves as fatter than they actually are.

### 1.3 HISTORICAL OVERVIEW

#### 1.3.1 The Emergence of Anorexia and Bulimia Nervosa

The first documented case of anorexia nervosa (although not referred to as such) occurred three centuries ago in 1689 (Bruch, 1973; Waltos, 1986). An English physician, Dr. R. Morton, described the case of wilful starvation in an 18 year old female patient who subsequently died from the disorder. Morton vividly described the patient's poor eating, emaciation, amenorrhoea, and frantic and habitual studying each night. Morton labelled the disorder as "nervous atrophy" clearly distinguishing it from consumption. Morton diagnosed another case of the disorder in 1694 (Bruch, 1973; Casper, 1983; Waltos, 1986).

In spite of Morton's 17th century findings, the next documented report of anorexia nervosa did not occur until the 19th century when another English physician, Sir William Gull (1868) published an account of the wilful self-starvation of a female patient. Although Gull initially labelled this condition "apepsia hysterica", in 1873 he considered the term "anorexia nervosa" more appropriate. Also in 1873 a French physician Dr. C. Lasegue independently published details of similar findings and labelled the disorder



"hysterical anorexia". This rekindled interest in anorexia nervosa as an eating disorder. The term "anorexia nervosa" was officially coined by Gull in 1874, and anorexia nervosa became recognized as a clinical syndrome (Casper, 1983; Dally, 1967; Vandereycken & Lowenkopf, 1990). From a review of the American literature relating to anorexia nervosa, Vandereycken and Lowenkopf (1990) claimed "the first explicit clinical description of a case of anorexia nervosa by an American author (James Hendrie Lloyd) did not appear until 1893" (p. 531).

Unlike anorexia nervosa, bulimia nervosa is a much more recently acknowledged syndrome. When the DSM classification system first included bulimia in 1980 the origins of this disorder were unclear. Casper (1983), in a search for the origins of bulimia, carried out an extensive review of the literature throughout the previous century seeking references to bulimia or related symptoms such as overeating or vomiting. Casper (1983) concluded that the literature suggested bulimia as a syndrome was likely to have originated around 1940, and that "the first cases of compulsive overeating and induced vomiting evolved in connection with anorexia nervosa" (p. 12).

Stein and Laakso (1988), in disputing Casper's (1983) claims of the origin of bulimia, asserted that various conceptualizations of bulimia in the literature date back a few hundred years. For example, James (1743) "A Medical Dictionary" outlines in over two pages a description of "bulimos", its symptoms, diagnosis, presumed aetiology and treatment recommendations (cited in Stein & Laakso, 1988, p. 206). According to Stein and Laakso (1988), James (1743) claimed that true bulimos may include "shortness of breath and an intense preoccupation with food" and "while some patients experience the complication of vomiting following the intake of large amounts of food, others do not" (p. 206).

Stein and Laakso (1988) admitted that early references to excessive eating, and sometimes to self-induced vomiting, excluded reference to restriction of food intake prior to bingeing. They further admitted that such references may have involved an undiagnosed medical condition such as parasitic worms. Stein and Laakso (1988) also agreed that the established consensus among researchers was that bulimia as a disorder originated primarily about the middle of the 20th century.

One of the first widely acknowledged descriptions of binge eating was outlined by Stunkard (1959). In referring to eating patterns among the obese, Stunkard (1959), described three patterns. These were, 'night eater' (a.m. anorexia and p.m. bulimia), 'true binge eater' (orgiastic binges), and, 'eating without satiation' (random over-eating). According to Stein and Laakso (1988) all three eating patterns outlined by Stunkard (1959) encompassed to varying degrees the primary 'current' symptoms of bulimia (i.e., as conceptualized in 1988). Stein and Laakso (1988) claimed that Stunkard's division of eating behaviours into different patterns showed that "Stunkard recognized how diverse binge eaters may be in terms of symptom severity, frequency, and accessory symptoms" (p. 202).

Various descriptions of binge eating disorders followed that of Stunkard's in the ensuing decades as did numerous suggestions of appropriate diagnostic terms. Bulimia nervosa was first portrayed as a clinical syndrome by Russell (1979). Bulimia was first recognized as a diagnostic entity in the Diagnostic and Statistical Manual of Mental Disorders in 1980, thus facilitating standardized diagnoses. In the 1987 revision of the DSM-III (DSM-III-R; APA, 1987) the diagnostic term 'bulimia' was replaced with the term

'bulimia nervosa'.<sup>\*</sup>

### 1.3.2 Social Context

In parallel with the historical emergence of eating disorders in the medical profession, there have been broader socio-cultural changes in the perceptions of what constitutes an attractive body shape for women. Standards of ideal beauty have changed throughout history. Women have traditionally endeavoured to alter their body shape to conform with the ideal image of beauty of the era at that time (Haines, 1987; Wiseman, Gray, Mosimann & Ahrens, 1992).

The history of painting indicates that, at least in some periods, male artists, and their patrons, have admired well-rounded body shapes in women. During the Renaissance period the paintings of Rubens and Botticelli, for example, depicted women, presumably as beautiful and desirable, who would be overweight according to the current slim ideal.

A changing trend in the socially ideal body shape for females has been evident throughout the 20th century. For example, from their study of three women's magazines, during the period 1900 to 1986, Agras and Kirkley (1986) calculated an index of thinness using randomly selected pictures of women throughout each of these magazines. Findings indicated that in the first decade of the 20th century the socially desirable woman was plump. During the 1920s thinness became desirable, followed in the following few

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\* As the DSM-III (1980) diagnostic term "bulimia" was replaced with the term "bulimia nervosa" in the DSM-III-R (1987) these terms are used interchangeably throughout this study. The term "bulimia" is used in reference to research carried out prior to 1987, some being published post 1987. The term "bulimia nervosa" is used in reference to research carried out after 1987. Where references to "bulimia" and "bulimia nervosa" research are interwoven the more recent term, "bulimia nervosa", is used in each instance.

decades by a less slim ideal again (e.g., Marilyn Monroe), followed yet again by an extremely thin ideal (e.g., Twiggy).\*

During times of food scarcity, such as the Great Depression of the 1930s and World War II, anorexia was a rare disorder (Haines, 1987). In New Zealand, during the 1930s Depression, magazines displayed frequent advertisements for tonics to increase the weight of thin women (Haines, 1987). Bruch (1973) claimed that self-starvation is only observed when adequate and abundant food supplies are available. According to Brumberg (1988) the incidence of anorexia nervosa began to increase during the 1960s in the post-war affluent society.

## **1.4 EPIDEMIOLOGY OF ANOREXIA AND BULIMIA NERVOSA**

Although anorexia nervosa occurs predominantly in females, approximately 5% to 6% of sufferers are male (APA, 1987; Vandereycken & Van den Broucke, 1984). Research indicates that 30% to 50% of women with anorexia nervosa develop bulimic symptoms (Johnson & Lewis, 1984). Females constitute at least 90% of individuals with bulimia nervosa (APA, 1994).

### **1.4.1 Prevalence**

Early prevalence studies of anorexia nervosa and bulimia reported widely ranging differences in their findings, especially for bulimia. Many of these studies suffered from flawed methodologies. Methodological differences in establishing the prevalence of anorexia and bulimia nervosa have included: sampling issues, method of assessment, and scope of assessment. For example, some prevalence studies have been limited to student

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\* The socio-cultural influence on women's body shapes is discussed below (see Values of Western Society).

populations, and others to community samples. The outcomes of prevalence studies have not only been affected by the biases inherent in such select samples, but also by a tendency to rely on self-report questionnaires. Further inconsistencies in prevalence findings have been partly due to the age ranges of people surveyed and differences in diagnostic criteria being adopted, especially in defining what constitutes binge eating. Also the secrecy and guilt which frequently accompany bulimia nervosa may deter some women from admitting that they have suffered from the disorder, in spite of the confidentiality of research inquiries, thus making some sampling methods more effective than others.

Using sound epidemiological methodology, Wells, Bushnell, Hornblow, Joyce and Oakley-Browne (1989) assessed lifetime prevalence rates for DSM-III anorexia nervosa and bulimia in 994 women and 504 men aged 18 to 64 years. Women aged 18 to 44 years were over-sampled. Using a probability sampling method for the entire Christchurch (New Zealand) urban area, and face-to-face structured interviews by trained lay interviewers, Wells et al. (1989) reported female lifetime prevalence rates for anorexia nervosa of 0.3%, bulimia of 1.9%, and eating disorders (anorexia or bulimia) of 2.1%. Six months prevalence rates for the same female sample were reported for eating disorders (anorexia or bulimia) of 1.3% (Oakley-Browne, Joyce, Wells, Bushnell & Hornblow, 1989).

Further findings from the data gathered in the Christchurch epidemiology study (Oakley-Browne et al., 1989; Wells et al., 1989) were reported by Bushnell, Wells, Hornblow, Oakley-Browne and Joyce (1990). Prevalence rates for DSM-III bulimia, in women aged 18 to 44 years, were reported as 1% at the time of interviewing, and 2.6% for lifetime prevalence (Bushnell et al., 1990). These findings highlight the concentration of bulimia nervosa in young women.

Kendler, MacLean, Neale, Kessler, Heath and Eaves (1991) assessed the lifetime prevalence of DSM-III-R bulimia nervosa in a population-based sample from a twin registry in Virginia. By way of psychiatric face-to-face interviews 2,163 white female twins aged 17 to 55 years were surveyed. The lifetime prevalence rates reported were 2.8% for narrowly defined bulimia nervosa and 5.7% for "bulimic-like" syndromes. Narrowly defined bulimia nervosa referred to subjects who met DSM-III-R criteria for the disorder. "Bulimic-like" syndromes (or broadly defined bulimia), in addition to referring to subjects with narrowly defined bulimia, also included possible cases. A possible case was defined as one where most but not all DSM-III-R diagnostic criteria were met and the syndrome was believed to be clinically significant.

Walters and Kendler (1995), using data from the structured interviews of the female twin sample of Kendler et al. (1991), reported prevalence for computer narrowly defined anorexia nervosa as 0.51%, clinically narrowly defined anorexia nervosa as 1.62%, and anorexic-like symptoms as 3.7%. Computer narrow anorexia nervosa was assessed according to "strict computer algorithm based solely on responses to the appropriate [Structured Interview for DSM-III] SCID items assessing DSM-III-R criteria" (Walters & Kendler, 1995, p. 65).<sup>\*</sup> Clinically narrow anorexia nervosa was defined as a "definite or probable clinical diagnosis based on all available information" and anorexic-like symptoms (clinical broad) was defined as "definite, probable, or possible cases of anorexia nervosa as diagnosed" (Walters & Kendler, 1995, p. 65). A probable case of anorexia nervosa referred to one where although all DSM-III-R criteria were not met with certainty the person suffered from a psychiatric condition with anorexic-like symptoms which more closely resembled classic anorexia nervosa than any other psychiatric condition. A possible case of anorexia nervosa referred to one

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<sup>\*</sup> SCID items were adapted to meet DSM-III-R diagnostic criteria.

where all DSM-III-R criteria were not met but the person probably suffered from a psychiatric condition with anorexic-like symptoms outside the bounds of normal weight-related disorders.

Interestingly, Walters and Kendler (1995) criticized the DSM-III-R criteria of amenorrhoea lasting three or more months in the diagnosis of anorexia nervosa. Walters and Kendler argued that many women in their sample who probably suffered from anorexia nervosa failed to meet the DSM-III-R criteria for amenorrhoea as their menstruation cycles may have been affected by the use of oral contraceptives. This argument highlights the impact of diagnostic criteria on the outcome of surveys of the prevalence of anorexia nervosa.

#### **1.4.2 Mortality Rate**

Although bulimia nervosa is not likely to result in death it can seriously affect the physical and psychological health of those who suffer from the disorder. For those who develop anorexia nervosa the prognosis is even more severe. In a 20 year long-term follow up study of persons with anorexia nervosa, Ratnasuriya, Eisler, Szmulker and Russell (1991) found at five year follow-up that 15% had died from causes associated with anorexia nervosa. Sullivan (1995) aggregated the published data of 42 studies on mortality over follow-up in sufferers of anorexia nervosa, and found a mortality rate of 5% per decade. The cause of death was specified in 38 of the 42 studies. The most common cause of death was reported as "the complications of inanition or bingeing and purging behavior accounting for 54%" (Sullivan, 1995, p. 4). A further 27% of deaths were reported to be from suicide. The remaining 19% of deaths were attributed to unknown or other causes (Sullivan, 1995). Similarly to the findings of Sullivan (1995) the DSM-IV (APA, 1994) reported the most common causes of death in

people with anorexia nervosa as "starvation, suicide, or electrolyte imbalance" (p. 543).



## CHAPTER TWO

### SOCIAL LEARNING THEORY

for every chicken discovered by a unidirectional environmentalist, a social learning theorist can identify a prior egg" (Bandura, 1977, p. 203; regarding the debate of causal direction between environment and behaviour)

#### 2.1 WHAT IS SOCIAL LEARNING THEORY?

In defining social learning theory it has been emphasized that "social learning theories of personality are first and foremost *learning* theories" (Corsini, 1987, p. 1058). Learning theory, as defined in a dictionary of psychology, is

a general term to describe the systematic body of theory and data generated by the study of learning, i.e., classical and instrumental conditioning, and usually applied to the theories and controversies current in the American psychology of learning before and immediately after the second world war and in particular the work of Hull, Guthrie, Tolman and Skinner (Harré & Lamb, 1983, p. 348).

Social learning theory can be conceptualized within the broad framework of learning theory. However, the formulation of a definition of social learning theory has been confounded by the variety of social learning approaches which have formed over many years (e.g., Bandura & Walters, 1963; Miller & Dollard, 1941; Rotter, 1954). A comprehensive definition of social learning theory offered by a dictionary of psychology is that it is "a loosely organized collection of hypotheses which state that social behavior develops mainly as a result of observing others and reinforcement" (Harré & Lamb, 1983, p. 588). Another dictionary of psychology provides a more extensive explanation by defining social learning theory in two sections as:

1. A theory put forward by Bandura and Walters, postulating that much of a person's behaviour (particularly his [sic] social behaviour) is learned by copying that of 'models' whom he [sic] respects\* ... 2. More generally, any theory of social behaviour that emphasizes the role of learning and reinforcement as the determining factors (Sutherland, 1989, pp. 410-411).

On the basis of the definitions outlined, social learning theory is conceptualized in this study as a theory which, in addition to incorporating the conditioning and reinforcement principles of behaviour theories, has the broadened concept of learning behaviours through observing and imitating models. For social learning theory the behaviours of individuals and the social environment are determinants of each other.

## 2.2 HISTORICAL OVERVIEW

Dollard and Miller's work on imitation has contributed much to the development of social learning theory. Miller and Dollard (1941) perceived imitation as a factor in socialization. This was conceptualized in terms of the reinforcement gained by a person (or animal) upon the achievement of an intended outcome from imitating someone else (Miller & Dollard, 1941). Dollard and associates also contributed to social learning theory in relation to conflict, frustration, aggression and psychotherapy (e.g., Dollard, Doob, Miller, Mowrer & Sears, 1939; Miller, 1944; Sears, 1941, 1943). Sears and others attempted to bring together psychoanalytic and stimulus-response learning theory to account for human behaviour (e.g., Sears, 1943, 1951; Sears, Maccoby, Eleanor & Levin, 1957).

A major advance in the development of social learning theory can be attributed to the work of Albert Bandura and associates (e.g., Bandura, 1965,

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\* Such a definition, in attributing social learning theory largely to Bandura and Walters, does not claim that Bandura and Walters were the first social learning theorists.

1973a, 1973b, 1977a, 1977b; Bandura & Walters, 1963). Although Bandura, like Sears, used learning principles to explain issues in human social development, Bandura worked from a very different perspective. Thus, although Bandura was influenced by Sears perspective, he reacted against it (e.g., Bandura & Walters, 1963). Bandura disputed the psychoanalytic approach, with its notion that social behaviour can be explained through the action of inner forces or 'drives', and focused on the cognitive and information-processing aspects of individuals that mediate social behaviour (e.g., Bandura, 1977). For Bandura, social learning theory evolved largely from the operant theory of Skinner (e.g., Skinner, 1953), with the introduction of concepts such as modelling (e.g., Bandura, 1973b; Bandura & Walters, 1963).

Although not as widely recognized a contributor to social learning theory as Bandura, a researcher who has contributed much to the contemporary development of social learning theory is Gerald Patterson (e.g., Patterson, 1969, 1975, 1980, 1986; Patterson, DeBaryshe & Ramsey, 1989; Patterson & Reid, 1970). Patterson and associates' studies of problem behaviours in children, and family interaction, have been particularly pertinent.

With its diverse beginnings it is not surprising that various forms of social learning theory exist, some being more widely accepted than others. For example, Grusec (1992) argued that, unlike the work of Bandura, the approach emphasized by Sears and associates has little relevance to modern conceptualizations in developmental aspects. The perspective adopted for this thesis is in agreement with Grusec's stance. Although each form of social learning theory is acknowledged to have some utility, the social learning theories of Bandura and Patterson are most relevant to this report, and consequently will be outlined further.

Bandura's perspective on modelling is pertinent to this thesis in explaining how behaviours, attitudes and values (e.g., cultural and family values) are transmitted to developing children via processes of modelling. The concepts of self-efficacy and reciprocal determinism, developed by Bandura, are also very relevant. Aspects of Patterson's theory pertinent to this thesis are the concepts of reciprocity and coercion, particularly as they operate on a moment by moment basis in family interaction.

## 2.3 BANDURA AND SOCIAL LEARNING THEORY

### 2.3.1 Bandura and Colleagues' Emphasis on Modelling in Social Learning Theory

A major contribution to the development of social learning theory in explaining human behaviour was the experimental investigation of the concept of modelling by Bandura, Walters and associates. These researchers conducted a series of experiments on the observational learning of aggression in children (e.g., Bandura, 1973a; Bandura & Walters 1963). Consequently, for Bandura, Walters and associates the notion of imitation became elevated to a position of primary importance in social learning theory.

The experimental investigation of learning through observation, by Bandura, Walters and associates, involves several key elements. Firstly, the demonstration of behaviour is part of the repertoire of the model rather than of the learner. Secondly, observational learning involves social interaction. The social interaction may be between a real-life model and the observer, or vicarious social interaction between a symbolic model and the observer. The observation of the model occurs one or more times followed by some form of test of the observer to ascertain if s/he is displaying

competencies s/he had not previously displayed (i.e., imitation of the modelled behaviour).

### The Learning and Establishment of a Particular Behaviour

Social learning theory offers a comprehensive explanation of how particular behaviour patterns become learned and established over time. Bandura (1975) suggests that three components exist: acquisition, performance and maintenance.

#### (a) Acquisition

Bandura (1973b) criticised traditional theories of behaviour for assuming that the acquisition of a particular behaviour (learning) only occurs when the person performs a response, and subsequently experiences prompt response-contingent reinforcing consequences. Bandura explained that while operant conditioning is useful for strengthening and maintaining responses already existing in one's behavioural repertoire, it tends to be too laborious and inefficient in developing new behaviour repertoires. Although Bandura was referring in this instance to attempts to intentionally change behaviour, this concept also applies to unintentional learning. Any assumption that a person must emit some approximation of the response in order to learn it ignores the concept of learning through observation. Bandura (1973b) argued:

In cases in which a behavioral pattern contains a highly unique combination of elements selected from an almost infinite number of alternatives, the probability of occurrence of the desired response, or even one that has some remote resemblance to it, will be zero. (pp. 151-152).

Bandura (1973b) further criticised traditional theories of behaviour for assuming that direct reinforcement is essential to the acquisition of a behaviour. Bandura argued that although reinforcement following an

event can significantly influence the probability that the preceding response will occur in the future, such events can not be considered a necessary precondition for the acquisition of a behaviour. Bandura claimed that a person can learn through observation even when s/he does not reproduce a model's responses during acquisition and therefore cannot receive direct reinforcement. Thus much of the acquisition of observed behaviour may take place cognitively in that the modelled behaviour and reinforcement becomes internalized and exhibited in a similar manner at some later time. Bandura (1973b) cited such examples as learning to swim and learning to drive an automobile as evidence that the behaviours of models are widely used to accelerate the acquisition of specific behaviours, and to prevent one-trial fatal consequences where behaviours have the potential to achieve this.

In summary, the acquisition of a particular behaviour (learning) can occur through experience of reinforcement for a particular behaviour or through observing such behaviour and its consequences in other people (observational learning). Modelling enables people to readily develop complex behaviour patterns. Bandura (1973b) claimed:

Much social learning is fostered by exposure to real-life models who perform, intentionally or unwittingly, patterns of behavior that may be imitated by others. Once a learner has developed an adequate verbal repertoire, however, increasing reliance is placed on the use of verbally or pictorially present symbolic models (p. 153).

According to Bandura and associates (e.g., Bandura, 1973b; Bandura & Walters, 1963) *symbolic models* (i.e., not real-life models) may be in the form of verbal or written instructions (e.g., radio broadcast or manuals). Alternatively, symbolic models may be pictorially presented, or through a combination of these methods (e.g., films and television). Much symbolic modelling does not include direct instructions to the observer.

In reference to the considerable amount of time young people spend observing pictorially presented models, mainly through television, Bandura and Walters (1963) argued that “such models play a major part in shaping behavior and in modifying social norms and thus exerting a strong influence on the behaviour of children and adolescents” (p. 49).

#### (b) Performance

From its beginnings social learning theory has claimed that the performance of a particular behaviour is dependent on environmental conditions which may elicit such behaviour, on environmental cues as to the likely consequences of the behaviour, and on past reinforcement received for such behaviour. Thus the social environment, rather than internal personality factors, is considered to be the primary influence on the performance of many behaviours.

An important insight which Bandura and Walters (1963) introduced to social learning theory was an explanation of the role that observation plays as a mechanism in the *inhibition* and *disinhibition* of the performance of behaviours (i.e., in reducing or increasing an observer's impulse for action). Bandura and Walters (1963) pointed out that the response consequence incurred by a model can affect the subsequent behaviour of the observer by inhibiting or disinhibiting the performance of the observer's already learned behaviour. From this perspective a person may observe a behaviour being punished in a model. Consequently, the observer may suppress the learned behaviour and never actually engage in it or be punished for it. Alternatively, behaviour that has been learned by a person, and kept suppressed, may be engaged in as a result of observing the behaviour occurring in a model and remaining unpunished. Much of Bandura and

Walters' evidence for these claims was acquired through the study of aggressive behaviour in children (e.g., Bandura & Walters, 1963).

Bandura and associates carried out numerous experiments testing the influence of immediate response consequences to models' behaviours. For example, Bandura, Ross and Ross (1963) used film of two adult males to model aggression and response consequences to pre-school children. Children were randomly assigned to one of four groups (1) aggressive model rewarded; (2) aggressive model punished; (3) a control group not exposed to the models; and (4) a second control group which viewed highly expressive but nonaggressive models. The aggressive model rewarded group viewed one of the models applying considerable physical and verbal aggression in retaliation to the gathering together of possessions by the other male. The aggressive model punished group viewed the same film as the aggressive model rewarded group except that the sequence was altered so as the aggressive model became severely punished (rather than rewarded) for his aggressive behaviour.

In testing the incidence of aggressive responses by children following exposure to the models Bandura et al. (1963) found that children who had viewed the aggressive model being rewarded displayed more imitative physical and verbal aggression than children who had viewed the aggressive model being punished. There was no significant difference in imitative responses of aggressive behaviour between the children who had viewed the aggressive model being punished and the control groups. Further, Bandura et al. (1963) found that the viewing of the punished model had inhibited boy's aggressive responses that were not imitative. On the other hand children who had viewed the aggressive model being rewarded displayed more disinhibited aggressive behaviours.



Not all investigations of inhibition and disinhibition in children by Bandura and/or associates pertained to aggression. For example, Walters, Leat and Mezei (1963) studied the inhibition and disinhibition of *deviant* behaviour in pre-school children. After viewing a film of a child playing with forbidden toys, one group of children viewed the deviant behaviour being rebuked by the child's mother. A second group of children viewed the deviant play behaviour being rewarded through nurturance from the child's mother. A control group of children did not view the film. Each child was subsequently left alone for 15 minutes with forbidden toys. Children who had viewed the deviant play behaviour being rewarded played more frequently with the forbidden toys (i.e., disinhibited behaviour) than children who had viewed the punishing consequences (i.e., inhibited behaviour). The control group children demonstrated an intermediate amount of resistance to temptation to play with the toys.

The *characteristics* of a model (e.g., his/her status position) have also been claimed to affect the likelihood of disinhibition of a behaviour by an observer (Bandura & Walters, 1963). For example, Lefkowitz, Blake and Mouton (1955) demonstrated that when a pedestrian model violated a traffic signal an increase occurred in pedestrian violations among observers of the model especially if the model was considered to be a high-status person. This demonstrates the effectiveness of high-status models in influencing behaviours.

As well as strengthening or weakening inhibitory responses, the behaviour of models may evoke the performance of non inhibited responses that have been acquired previously. Without the observation of the model such behaviours, which are the same as or similar to those displayed by the model, may not otherwise have been performed. Bandura (1973) distinguishes this *response facilitation effect* from disinhibition in that the

behaviour is unlikely to have incurred punishment. Consequently any behaviour increase is not due to the disinhibition of previously suppressed behaviour. An example of such behaviour is the observation and imitation of a television model performing aerobics exercises.

The experiments outlined here draw our attention to the notion of vicarious reinforcement. The vicarious reinforcement children receive when they observe models being rewarded for certain behaviours has been claimed to be an important mechanism in increasing the likelihood of the child performing the behaviour in the future (Bandura & Walters, 1963). Vicarious reinforcement is common in second or subsequent children in a family who learn by observing the consequences of certain behaviours in their older siblings. The oldest sibling, on the other hand, is more likely to have been reinforced directly.

Bandura and associates have also demonstrated that standards of *self-expectation* of performance can be learned through observing models. In an experiment where children participated in a bowling game where an adult or peer was the model, Bandura and Kupers (1963) found the observers were influenced by the models in relation to self-reward and self-punishment.

Bandura and Kupers (1963) found that, during the bowling game, when the model set a high standard for self-reinforcement (access to candy and self-approving statements) or for punishment (denying self-access to candy, and self-berating when standard not met) this high standard became adopted by the observers. In a similar manner, when the model set a lower standard for self-reinforcement or punishment this lower standard became adopted by the observers. Thus Bandura and Kupers (1963) found that the children's patterns of self-reinforcement and punishment were closely

matched to those of the model, even in terms of self-approval and self-critical comments. Consequently, children who had learned through imitation to set a high standard of self-expectation of performance rewarded themselves less sparingly than children who had learned a lower standard of self-expectation of performance.

### (c) Maintenance

From Bandura's perspective, and indeed that of many learning theorists (e.g., Skinner), the maintenance of a particular behaviour is largely influenced by its consequences. Repetition of the behaviour tends to occur whenever it is rewarded, whereas behaviour is less likely to occur if it is unrewarded or punished. Thus Bandura (1973a) claimed certain "forms of social behavior, can be produced, eliminated, and reinstated by altering the effects they produce" (p. 183).

The reinforcement contributing to the maintenance of an aspect of a previously performed behaviour may occur directly or vicariously. Vicarious reinforcement, in maintaining a behaviour, may occur through observing the consequences the behaviour has for others. Thus repeated observation of a model can take the place of practice in strengthening behaviour. Consequently the observation of a model being rewarded for a certain behaviour can induce an increase in frequency of imitation of the behaviour whereas observation of a model being punished for a certain behaviour can produce a decrease in the frequency of imitation of the behaviour, sometimes to the point of extinction (Bandura, 1973a).

The potential for self-reinforcement also contributes to the maintenance of certain behaviours. Pervin (1978) explained, in relation to aggressive behaviour, that, although an emphasis on self-reinforcement in controlling the behaviour may indicate an emphasis on internal causes, social learning

theorists claim that such internal controls were acquired under the control of external events and continue to be influenced, guided, and directed by external events. According to Pervin (1978) "People learn to respond evaluatively to their own behavior with self-praise and feelings of self-worth or with self-criticism and feelings of self-depreciation" (p. 78). However, these various response styles are learned in accordance with how other people, such as parents, responded to their behaviour. Such behaviour responses continue to be influenced by the responses of significant others, such as parents, who have control over rewards that are valued by their children or the behaviours.

### 2.3.2. Self-Efficacy

The concept of *self-efficacy*, introduced to social learning theory by Bandura (1977), also plays an important role in behaviour. Bandura (1986) defined perceived self-efficacy as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses" (p. 391).

Self-efficacy reflects an individual's belief in his/her personal capability to execute the behaviour in question. Bandura (1977) argued that self-efficacy is influential to the instigation of future behaviour. Bandura (1986) claimed that as a major determinant of performance of behaviour "self-efficacy... operates partially independently of underlying skills" (p. 391).

Bandura (1986) argued that although self-efficacy is a property of an individual it is not a personality trait as, unlike personality traits, self-efficacy is not consistent across situations. An individual may be high in self-efficacy in one area of functioning and low in another. Contrary to this

claim by Bandura, some personality theorists would argue that personality does not require high levels of cross situational consistency (e.g., Mischel, 1973).

Self-efficacy is independent of the expected outcome. When expected outcomes are considered in relation to self-efficacy, *efficacy expectations* become relevant. An efficacy expectation is defined as "the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura, 1977, p. 79). An outcome expectancy is defined as "a person's estimate that a given behavior will lead to certain outcomes" (Bandura, 1977, p. 79). Thus outcome expectations are reflected in an individual's judgement about the influence of the environment, or the functional capacity of the behaviour.

Self-efficacy theory provides a useful explanation of numerous behaviours (e.g., fear related behaviours) (Bandura, 1977, 1986). According to Bandura fearful expectations and avoidance behaviour occur mainly as a result of perceived self-inefficacy in coping with potential aversive events. A person who perceives him/herself as efficacious in exercising control over potential threats does not fear or avoid them. On the other hand, a person who perceives him/herself as inefficacious in managing potential threats is likely to perceive threats anxiously, envisage possible disasters if the threats were to be confronted, and thus avoid any association with them.

Self-efficacy may be linked in an intuitive way with self-esteem as Bandura (1986) claimed that, like self-efficacy, self-esteem is also essentially perceived in terms of how individuals evaluate themselves. "Self-esteem can stem from evaluations based on competence or on possession of attributes that have been culturally invested with positive or negative value" (Bandura, 1986, p. 356). Thus people derive pride from meeting or surpassing their

standards of competence, or self dissatisfaction from not meeting their standards. According to Bandura (1986) "It is the unfortunate persons combining ineptness, exacting standards, and disparaged attributes who are the most likely to harbor a pervasive sense of worthlessness" (p. 356).

In discussing familial sources of self-efficacy Bandura (1986) argued that parents influence the self-efficacy development of their children. In citing the findings of Levy (1943), Bandura (1986) claimed "overprotective parents, who are over-solicitous and dwell on potential dangers, undermine development of their children's capabilities ... whereas the more secure are quick to acknowledge and to encourage their children's growing competencies" (p. 415).

### 2.3.3 Reciprocal Determinism

Bandura's model of reciprocal determinism (triadic reciprocity)\* postulates that personal functioning occurs as a result of continuous interactions among behaviour, cognition and environmental factors. Bandura (1977) pointed out that "the term reciprocal is used in the sense of mutual action between events rather than in the narrower meaning of similar or opposite counteractions" (p. 194). Bandura's model of reciprocal determinism integrates cognitive, personality and social psychology (Kihlstrom & Harackiewicz, 1990).

Bandura (1977) criticized traditional psychological theories as perceiving behavioural dispositions and the environment as separate factors rather than determinants of each other. According to Bandura (1977) the environment, rather than being an inflexible entity which impinges on

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\* Triadic reciprocity is a term used by Kihlstrom and Harackiewicz (1990) to describe the concept of reciprocal determinism.

individuals, is essentially only a potentiality until impacted on by the behaviours of individuals. Just as individuals impact on the environment, the environment impacts on individuals in a reciprocal manner. According to Bandura (1977), although behaviour is affected by its contingencies, individuals contribute directly to producing the reinforcement contingencies that impact on them. Bandura (1977) argued that the widely accepted claim "change contingencies and you change behavior," should have added to it the reciprocal claim, "change behavior and you change contingencies" (p. 203).

According to Bandura's model of reciprocal determinism, although events occur reciprocally this does not mean they occur simultaneously; nor do they occur equally. The relative influence of each of the three factors (behaviour, cognition and environment) at any given stage depends on both the situation and the behaviour in question (Bandura, 1977). When environmental constraints are weak, personal factors are more influential. For example, such a situation is likely to occur when one is choosing a novel to read from a vast selection.

Bandura (1986) discussed an example of personal influence being dominant in the activation and maintenance of defensive behaviour. "False beliefs activate avoidant behavior that keeps individuals out of touch with prevailing reality, thus creating a strong reciprocal interaction between beliefs and action, which is protected from corrective environmental influence" (Bandura, 1986, p. 24). According to Bandura, false beliefs sometimes become so extreme that even severely punishing social consequences have little impact on either the beliefs or the accompanying behaviour.

### Reciprocal Determinism and Interpersonal Interaction

Bandura's model of reciprocal determinism can provide valuable insight into interpersonal interaction. In relation to this Bandura (1977) admitted that because the effects of personal and environmental factors are interdependent it is not very useful to our understanding of interactional processes to examine which percentage of variation in behaviour is attributable to persons and which to environments. Consequently, Bandura (1977) claimed "to elucidate the process of reciprocal interaction between personal and environmental influences, one must analyze how each is conditional on that of the other" (p. 197).

According to Bandura, one useful method of analysing the relationship between personal and environmental influences is through the analysis of sequential interchanges in social relationships. This method has been used in studies of dyadic interchange. For example, Bandura, Lipsher and Miller (1960) observed how the behaviour of one person evoked particular responses from the other person in the dyad. This then induced reciprocal interactions which collectively affected the social environment in an on-going predictable sequence.

Bandura (1977) argued that reciprocal interactions are not only governed by moment by moment behaviours. Counterresponses induced by antecedent acts of another person are also shaped by judgements of the likely later consequences of a particular response. For example, when a child who is experienced at performing coercive behaviours, expects to eventually achieve his/her goal through unrelenting effort, the child will maintain, or even heighten, the coercive behaviour even when threatened by immediate punishment (Bandura, 1977). On the other hand, Bandura (1977) claimed that when a child perceives the desired outcome of aversive behaviour to be unattainable, immediate punishment for the coercive behaviour will



inhibit its performance. Thus Bandura (1977) claimed "the predictive power of momentary reciprocal effects therefore derives partly from changes in the consequences anticipated over the course of sequential interchanges" (p. 198).

### Reciprocal Determinism and the Limits of Social Control: Advertising Persuasion as an Example

Bandura (1977) also applied his model of reciprocal determinism to broad social issues such as the role of persuasion and coercion in relation to the limits of social control. Bandura (1977) claimed that although an individual's awareness of how his/her behaviour can be manipulated tends to produce resistance to obvious attempts at this, awareness alone is inadequate to offset much social persuasion. Bandura argued this in relation to the powerful influences of advertising. According to Bandura (1977)

Most people are quite aware that advertisers attempt to influence their behavior by exaggerated claims, modeled testimonials, pseudo-experiments demonstrating the superiority of their products, paired association of events, and portrayal of benefits accruing to product users. Such knowledge does not make people immune to advertising influences (p. 208).

In furthering this argument Bandura made an association between the lack of immunity people have to advertising claims (in spite of their sceptical beliefs) with persuasion in relation to response consequences. Bandura (1977) argued that "coercion can extract compliance and rewards can induce accommodating behavior, even though people recognize that the incentives are prompting their actions" (pp. 208-209).

Bandura (1977) qualified these arguments regarding coercive compliance in claiming that due to reciprocal consequences, no individual is entirely prone to manipulation at the will of another individual. Some powerlessness always exists. For example, parents are unable to persuade

their children to adopt all their desires, and conversely, children are constrained by their parents in executing all their desires.

## 2.4 PATTERSON AND OTHERS AND SOCIAL LEARNING THEORY

Much theorizing about family interaction, from a social learning perspective, has been carried out by Patterson and his associates. Unlike Bandura, Patterson approached social learning theory from a "clinical" perspective. He began researching children who had evidenced developmental problems in their behaviours ranging from hyperactivity to aggressive conduct disorder (e.g., Patterson & Cobb, 1971; Patterson, Littman & Bricker, 1967). According to Vincent (1980) the social learning theory of Patterson and associates has focused extensively on family theory and family therapy because "problem children frequently originate in social environments (families) in which the learning contingencies may have gone awry" (p. 2). Patterson's social learning approach conceptualizes family psychopathology as emerging out of disturbances in family interaction caused by a number of different stressors.

Much of the social learning theory of Patterson has also been based on the research of problems between distressed married couples (e.g., Patterson & Hops, 1972; Patterson, Hops, & Weiss, 1974, 1975). The concept of reciprocity (from social exchange theory<sup>\*</sup>) has essentially been used alongside the concept of reinforcement (from operant theory) in explaining interactions of couples. Based on the theoretical work of Patterson and associates in developing the field of behavioural marital therapy, Jacobson and Margolin (1979) applied the principles of social learning theory to the treatment of

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\* Social exchange theory is "the doctrine that social interactions are based on expectations that benefits given, whether material or emotional, will be returned" (Macmillan, p. 410).

distressed couples. Jacobson and Margolin (1979) attributed their approach to social learning theory largely to the work of Patterson.

Like Bandura, and indeed all other social learning theorists, Patterson recognized that the most important determinants of behaviour exist in the external environment yet acknowledged that determinants of behaviour can also come from within the person. Thus it is important to consider cognitive variables as possible mediators of behaviour. Jacobson and Margolin (1979) pointed out that cognitive factors can enhance or constrain one's learning, thus affecting the difficulty level of the acquisition of specific behaviors.

People talk to themselves, they appraise their environments, and they make attributions and interpretations of their world. These self-statements, appraisals, and attributions mediate and moderate the effects of environmental stimuli on behavior, and can serve as either eliciting or discriminative stimuli (Jacobson & Margolin, 1979, p. 12).

#### 2.4.1 Reciprocity and Coercion

Two concepts, *reciprocity* and *coercion*, which have been important in social learning formulations of family interaction for some time, were introduced to social learning theory by Patterson and Reid (1970). In doing so Patterson and Reid (1970) outlined the origin of these concepts in operant learning theory and social exchange theory.

Reciprocity refers to dyadic interaction in which two people (A and B) reinforce each other at approximately equal rates. Positive reinforcement maintains the behaviour of each person during the interaction (Patterson & Reid, 1970). On the other hand, the notion of coercion describes "interaction in which aversive stimuli control the behavior of one person and positive

reinforcers maintain the behavior of the other" (Patterson & Reid, 1970, p. 133).

### Reciprocity

The notion of reciprocity has been primarily applied to studies of distressed couples. An important assumption of reciprocity is that the behaviour of marital partners is interdependent. Jacobson and Margolin (1979) pointed out that "the processes of influence and control in a marital relationship are mutual, reciprocal, and circular" (pp. 14-15).

The correlation of rewarding and punishing exchanges (reciprocity) operates at a number of different levels: on a moment by moment level and over an extended time frame. The probability of a person rewarding a partner is greater immediately following the receipt of reward from that partner. This notion of reciprocity has been found to apply even more strongly to punishment behaviours (e.g., Gottman, Notarius, Markman, Bank, Yoppi & Rubin, 1976). Research has also demonstrated that over an extended period of time rates of reward and punishment exchanged between couples are highly correlated (Birchler, Weiss & Vincent, 1975).

Clearly, distressed couples reciprocate a greater degree of punishment than non-distressed couples. On the basis of this finding, Jacobson and Martin (1976) observed that the relationships of some non-distressed couples are characterized by one-sided coercion. Such relationships are stable because the spouse does not acknowledge any distress or concern due to the coercive behaviour. Consequently, Jacobson and Margolin (1979) argued that "distress is more likely to become acute and acknowledged when the victim of coercion rebels and begins to reciprocate aversive control" (p. 16).

Jacobson and Margolin (1979) further argued that distressed couples often fail to attend to a partner's potentially rewarding behaviours. Distressed couples lowered sensitivity to positive behaviours by their partners occurs because they tend to selectively focus their attention on negative behaviour. Jacobson and Margolin (1979) refer to this increased reactivity to a partner's negative behaviour as "selective tracking".

In addition to studies of distressed married couples, Patterson and associates applied the notion of reciprocity to the interaction between children and their parents (e.g., Patterson & Reid, 1970). Whereas most earlier studies (e.g., Sears, Maccoby & Levin, 1957) had concentrated essentially on investigating the impacts of differential parent behaviours on their children's behaviours, Patterson and Reid (1970) claimed that parent-child interactions should be characterized, and thus investigated, as bi-directional or reciprocal. Although not first to suggest the mutual influence of child and parent, Patterson and Reid (1970) elaborated one form of reciprocity in the context of exchange and reinforcement consequences. Patterson and Reid (1970) argued that, in raising children, parents not only influence their children's behaviours, but children also influence their parents' behaviours in such powerful ways that this impacts considerably on the nature of child-rearing practices by the parents.

### Coercion in Problem Children and Their Families

#### (a) The learning of coercion

Patterson (e.g., 1980, 1982) acknowledges that, in normal and abnormal child development, coercive behaviour is acquired through observation and imitation of models. By the time a child reaches pre-school age s/he has had ample opportunity to learn coercive behaviours directly or vicariously through cultural and family influences (e.g., from observing and imitating parents, siblings and/or television models). Given that children have

learned how to be coercive, coercive behaviour requires appropriate punishment techniques. However, some parents lack the capacity and/or skills to punish coercion and thus prevent its excessive adoption into the child's repertoire.

#### (b) Correlational studies

Much social learning theory regarding coercion in family interaction resulted from studies that found correlations between family members in specific types of behaviour. For example, Arnold, Levine and Patterson (1975) found that, for the performance of deviant behaviour, correlations of exchange rates between problem children and their older siblings were .74, between problem children and their fathers .76, and between problem children and their mothers .16. Apart from the very small correlation between problem children and their mothers, Arnold et al. (1975) argued that their findings replicated those of Johnson et al. (1973). Further suggestive evidence to support the concept of the performance of coercive interactions has been found by other researchers. For example, Vincent (1980) cited an unpublished doctoral dissertation (Taplin, 1974) in which positive parent consequences for their children's behaviours were stable ( $r = .56$ ) over several months.

In addition to studies of the *performance* of coercive interactions in families, some studies have examined the *acquisition* and *maintenance* of coercive interactions. The method most widely used has been the sequential analysis of naturalistic observations (e.g., Patterson, 1975). Sequential analysis essentially searches for behaviours of family members which perform one of four types of "stimulus function" for coercive behaviours. These are:

antecedents that precede coercive behaviors and are associated with increases in conditional probability (Fs - facilitating stimuli)

or with decreases in conditional probability (Is - inhibiting stimuli), and consequences that follow coercive behaviors and increase the probability of occurrence (Accs - accelerating stimuli) or decrease the probability of occurrence (Dcs - decelerating stimuli) (Vincent, 1980, p. 15).

An example of the use of sequential analysis was reported by Patterson (1977), following an observation of a subject and his family over 72 hours, divided into sections of approximately six seconds duration. The focus of the search and analysis was "hostile behaviour". More recently sequential analysis has been used to build models demonstrating Patterson's social learning approach to behaviour, especially in relation to performance of antisocial behaviour in boys (e.g., Patterson, 1986).

#### (c) Reciprocity in coercion

Regarding the role of reciprocity in coercion Patterson (1980) cited studies which have found that if one person behaves aversively toward another person, the recipient is likely to reciprocate soon after. For example, in a study by Rausch (1965) if one adolescent behaved in an unfriendly manner toward another adolescent there was a .80 probability of reciprocation in kind.

The concept of reciprocity can enrich explanations of the behaviours of problem children in families. Patterson (1977) argued that a problem child is not always the instigator of coercive behaviour. For example, sometimes negative provocation's from other family members set children's coercive behaviours in motion. Patterson (1977, 1980) referred to this form of reciprocity as "counterattack". Patterson (1980) claimed that approximately one third of normal children's coercive responses are counterattacks.

On the basis of the reciprocity concept Patterson (1980) argued that coercive events in social interaction occur as sequential events to which each party

continues to contribute. Through interlocking contingencies, participants become both the perpetrators and the victims of the coercive interactions.

#### (d) Escalation

According to Patterson (1980, 1986) aversive events develop from failure of day-by-day social interactions. Patterson (1986) claimed that it is out of seemingly trivial interactions that escalated patterns emerge. Consequently a catastrophic family situation can develop from minor effects through the amplifying process of coercive family interaction.

Patterson and associates (e.g., Patterson, 1975, 1980; Patterson & Cobb, 1971) described how aversive behaviours rapidly accelerate aversive counteractions. Through the process of escalating coercion each individual continues to evoke the coercive behaviour of the other. In doing so the coercive behaviour of each individual is reinforced through the reciprocal intensity of interaction with the goal of each participant being to overpower the other through increasingly aversive counteractions.

According to Patterson (1980, 1982), once set in motion the aversive interchanges continue between participants in an escalating power struggle until one of them submits and withdraws. Sometimes the aversive interchanges continue to the extent that the entire family becomes disrupted. Thus the entire family unit becomes unstable.

#### (e) Behaviour change

Patterson (1982) claimed that participants in coercive interactions tend to be oblivious to its impact on behaviour change.

The findings from recent developments in cognitive psychology strongly suggest that behavior changes occur in complex social interactions without the participants being aware of them. The present writer believes that most changes in behavior have this quality (p. 92).



Regarding behaviour change, Patterson (1982) discussed how parents may inadvertently contribute to the development of coercive behaviour patterns in their children. For example, if a child's mild requests to a parent are not attended to, the child may increase the intensity of his/her request until his/her behaviour becomes aversive to the parent. Consequently the parent is likely to eventually pay attention to the child's aversive behaviour. If in doing so the parent meets the child's demands the parent has positively reinforced the child's coercive controlling behaviour and also received negative reinforcement, as attending to aversive behaviour has brought about its cessation. Thus, by submitting to the child's coercive demands, the parent has inadvertently trained the child to perform coercive behaviours in the future, and him/herself to comply with coercive demands.

Patterson (1980) argued that the ongoing reinforcement of coercive behaviours by parents leads to a "coercion trap". "Each event is both a 'reaction' to prior events and a 'stimulus' for events which follow" (Patterson, 1980, p. 5). Patterson (1980) further argued that because "the effects can be perceived only if one tracks sequences over a long time span ... the victim(s) involved may not be aware of this trap" (p. 6). Thus in opting for short-term pay offs in submitting to a coercive child a mother increases both the likelihood of coercive behaviour by her child in the future, and the likelihood that she will submit to such behaviour (Patterson, 1980, 1982).

#### (f) Parental deficits

Patterson (e.g., 1980, 1986) attributed the excessively high levels of coercive behaviour in some children to parental deficits in family management skills. These parental deficits were claimed to contribute to an increase in incidence of coercive behaviour in children.

Patterson (1982) claimed "parents of antisocial children are more likely to be *non-contingent* in their reactions to both prosocial and deviant child behaviors" (p. 225). According to Patterson (1982), parents of antisocial children punish more frequently than do parents of normal children. Further, such punishment responses were found to occur in an angry manner rather than more appropriately.

Patterson (1980), in discussing the relationship between children and their mothers, claimed that all mothers of normal pre-school children are subjected to aversive behaviours. Patterson (1980) claimed that the satisfaction level of mothers may be affected by the level of their children's aversive behaviours to the extent that it affects their level of well-being. Mothers of socially aggressive children were found to have significantly higher depression levels than mothers of normal children. Patterson (1980) claimed that the prolonged aversive behaviours of socially aggressive children induced low self-esteem in mothers of such children.

Patterson (1980) further claimed that in normal families the father serves a role as social contributor and resident "guest" while the mother is the "caretaker". Child management concerns are the shared task of both father and mother. In families with problem children, in addition to the roles of normal parents, crisis situations tend to be managed by the mother.

Patterson (1986) claimed that poor training in parenting skills may be handed down from one generation to the next. According to Patterson (1986) longitudinal studies found that "the poor discipline practices of the grandparents correlated with the antisocial behavior of both the parents and the grandchild" (p. 440).

Parental deficits can also occur in families which are vulnerable to difficult situations for various reasons. For example, a parent may be a heavy substance abuser, or suffer from depression. Such dysfunctional family environments inhibit the normal management of children. Patterson (1986) argued that the various stressors affecting the parents of problem children tend to covary and thus impact on their children differentially. According to Patterson (1986) clinical experience suggested that when extrafamilial factors induced high stress in parents of problem children, discipline of the children became increasingly difficult. Research data indicated that when mothers were suffering from high rates of stressors, higher rates of coercive behaviours were exerted by the mothers (Patterson, 1983).

Although the concepts in Patterson's (1986) models apply to antisocial boys some interesting claims are made concerning parental rejection. Patterson (1986) assumed that the primary determinant of self-esteem in a child is the level of parental support and involvement with the child, and that a bi-directional relation exists between deviant behaviour in a child and parental acceptance or rejection. According to Patterson (1986) antisocial behaviour by a child may be a major determinant of parental rejection. On the other hand Patterson (1986) claimed, "It may also be that a lack of maternal attachment to the child in some families serves as a determinant setting the coercive process in motion. For the older child, the relation between self-esteem and deviant behavior is thought to be partially mediated by parental rejection" (p. 438).

## 2.5 CONCLUSION

Both Patterson and Bandura have contributed much to the advancement of social learning theory through their overlapping yet distinctly different

approaches. Bandura, in promoting the concept of learning through observing and imitating models, provided a valuable framework for understanding the association between reinforcement contingencies and the performance and maintenance of behaviours. Observing and imitating models was demonstrated to play an important role in many areas of learning such as the acquisition of complex behaviour patterns, the inhibition and disinhibition of the performance of behaviours, and the learning of standards of self expectations. Bandura's emphasis on the importance of imitation in learning seemed timely in paralleling the introduction into the majority of Western world homes of television, a powerful mechanism of social influence via symbolic modelling.

Bandura also extended the realms of social learning theory through the introduction of the concepts of self-efficacy and reciprocal determinism. For example, the concept of self-efficacy has enriched explanations of how cognitive processes influence the course of action of an individual. Cognitive processes are further understood through Bandura's concept of reciprocal determinism. The notion of reciprocal influences between cognitions, behaviour and the environment is useful in understanding the numerous contingencies in interpersonal interactions.

Although Bandura's model of reciprocal determinism can contribute to an understanding of interaction in families, it does not always operate at the level of direct interpersonal interactions. For although the application of reciprocal determinism to family interaction can demonstrate how moment by moment interactions occur (micro level of analysis), Bandura's model is more applicable to understanding social influence at a macro level through modelling.

Patterson's models, in contrast to Bandura's, primarily apply to analysis of social interaction at the micro level. Social interaction is at the core of Patterson's models, as this approach to social learning theory is grounded in moment by moment interaction between people. Learning through observing models is not a central issue for Patterson.

Patterson's models of social interaction between individuals are particularly applicable to the performance aspects of behaviours. The performance of coercive behaviours, especially as they escalate between children and their parents, are a primary focus of Patterson's models. These are particularly relevant to dysfunctional interaction, especially regarding ineffective parenting strategies. Also in relation to dysfunctional interaction, the concept of reciprocity, in demonstrating the correlation of rewarding and punishing exchanges, can be used to explain the course of aversive social processes.

Although Bandura's theoretical approach is more abstract than Patterson's, the models of both theorists are similar in some aspects, such as their emphasis on mutually dependent interactions over time. Also, both theories argue that individuals' behaviours can produce effects they neither expect nor intend. Whereas Bandura's theory emphasizes that individuals can inadvertently learn from models, Patterson's theory emphasizes that individuals can inadvertently produce behaviours they do not want through reinforcing coercive behaviours and thus becoming trapped in coercive patterns of interaction.

For the purpose of this study both Bandura's and Patterson's approaches provide a valuable theoretical foundation for the investigation of women with eating disorders and their families. Patterson and associates' social learning perspective of interaction in families of problem boys, and

interaction between distressed married couples, contributes to the understanding of dysfunctional interactions in families of women with eating disorders. Indeed, several researchers claim dysfunctional interaction, including marital distress, to be a central issue in families of women with anorexia and bulimia nervosa (e.g., Minuchin, Rosman & Baker, 1978; Root, Fallon & Friedrich, 1986). Bandura's theory is also applicable to women with eating disorders and their families, particularly in explaining the manner in which certain behaviours are learned (either intentionally or inadvertently) by observing and imitating that of models (e.g., dieting behaviour). Bandura's concept of self-efficacy applies well to an understanding of the cognitive processes of women with eating disorders. The concept of reciprocal determinism is applicable to interpersonal interaction, especially as it occurs in the family environments of women with eating disorders. Thus, from the perspective of this study, Patterson and associates' theory complements that of Bandura and associates in providing a potentially useful foundation for the understanding of women with anorexia and bulimia nervosa and their families.

## CHAPTER THREE

# SOCIO-CULTURAL, FAMILY AND INDIVIDUAL FACTORS IN THE AETIOLOGY OF ANOREXIA AND BULIMIA NERVOSA

You should have seen this place on Sunday nights... Nobody would eat anything past twelve noon, and the whole second floor bathroom would smell so bad that you couldn't use it (Vincent, 1979, p. 78; a student's description of purging behaviours in the ballet hostel the evening before weekly weighing sessions).

### 3.1 GENERAL PERSPECTIVE

A variety of theoretical perspectives have been posited to explain the aetiology of anorexia and bulimia nervosa. Examples of major competing theories include medical models, in which physical causes are emphasized; the psychoanalytic model, based on Freud's drive notion; and the sociological model, in which cultural variables are considered the causes of the disorder. Some theories emphasize that anorexia and bulimia nervosa are multidetermined disorders (e.g., Garner & Garfinkel, 1985; Root, Fallon & Friedrich, 1986).

This thesis adopts the view that anorexia and bulimia nervosa are complex psychological disorders which are multidetermined. Socio-cultural, family, and individual (i.e., genetic, individual specific, and shared family) variables interact to create a context for the development of an eating disorder. These major categories of predisposing factors are considered to be interrelated and overlapping. In arguing that a multidetermined aetiology of anorexia and/or bulimia nervosa exists, this thesis adopts a social learning perspective. It argues that socio-cultural factors (e.g., cultural values and norms) combined with social learning (i.e., social reinforcement, modelling,

and imitation) are fundamental to the aetiology of anorexia and bulimia nervosa. It identifies the family as a critical context within which social variables exert their impact on individuals and where much social behaviour is learned.

Certain precipitating factors which tend to be associated with anorexia and/or bulimia nervosa will be outlined. However, this thesis acknowledges that although all women with anorexia and/or bulimia nervosa experience a number of these typical precipitating factors, they do not all experience the same precipitating factors, nor to the same degree. Every eating disorder case is unique, and its aetiology complex.

## **3.2 SOCIO-CULTURAL FACTORS**

### **3.2.1 Introduction**

The sociocultural influence in the development of anorexia and/or bulimia nervosa is widely acknowledged (e.g., Bruch, 1973; Epling & Pierce, 1991; Powers, Fernandez & Tampa, 1984). From a social learning perspective the importance of learning through observation is fundamental to sociocultural influences (Bandura, 1986). An individual (the model) who behaves in what is considered a desirable way is providing the observer (the learner) with the opportunity to acquire a cognitive representation of how to behave. Learning by direct experience also plays a vital role in the development of both adaptive and non-adaptive behaviours.

### **3.2.2 Values of Western Society**

A cultural factor consistent across people who develop anorexia and/or bulimia nervosa is living in an industrialized Western-type society (e.g.,



Bruch, 1978; Garfinkel & Garner, 1982; Wooley & Wooley, 1982). The values and norms of Western society include a preoccupation with body shape, dieting, achievement and self-control, physical fitness, and high calorie foods.

### Body Shape

In many Western societies women are constantly bombarded with messages that a slim body is beautiful, desirable and a symbol of sexuality, success and social competence. As the body shape presented by fashion models, particularly highly successful ones, is considered desirable, many women observe such models, develop a chronic dissatisfaction with their own body, and attempt to modify their bodies. Bruch (1978) claimed that not only social models, but also magazines and movies all convey this slim body ideal message to women, "but most persistent is television, drumming it in, day in day out, that one can be loved and respected only when slender" (p. viii). From these messages many Western women have developed a preoccupation with slenderness (e.g., Garfinkel & Garner, 1982; Wiseman, Gray, Mosimann & Ahrens, 1992; Wolf, 1991; Wooley & Wooley, 1982).

Garner, Garfinkel and Olmsted (1983) emphasized the powerful influence of the symbolic modelling of body images in Western society media claiming:

If a thin shape has been considered desirable in Western society during the last century, in the last decade there has been an almost fetish-like quality to the preoccupation with thinness for women. The examination of virtually any women's fashion magazine today illustrates the point more elegantly than written description. It was our impression several years ago that not only were women being confronted more aggressively by the media with the 'thin body image,' but also these 'ideals for feminine beauty' were notably thinner than they had been in the past (pp. 69-70).

Garner, Garfinkel, Schwartz and Thompson (1980) found that between 1959 and 1979 the socially desirable body weight for women had decreased to an almost unattainable level. Examples of this trend towards excessive slimness were found in *Playboy* magazines and beauty contests. Wiseman et al. (1992) also found this trend towards an increasingly slimmer ideal body shape in their examination of American *Playboy* centrefolds and Miss America contestants from 1979 to 1988. It was found that body weights were 13% to 19% below the normal weight for young women, thus showing a significant reduction in expected weight during this period. Wiseman et al. (1992), in comparing their findings with similar earlier research, found that a significant decline in ideal female body weight had also occurred from 1959 to 1978.

Similarly to Wiseman et al. (1992), Naomi Wolf (1991) reported, in *The Beauty Myth*, that whereas in 1970 the average weights of American *Playboy* Playmates had fallen 11 percent below the national average for young women, by 1978 such weights had plummeted to 17 percent below the national average. Wolf (1991) also argued that "a generation ago, the average model weighed 8 percent less than the average American woman, whereas today she weighs 23 percent less" (p. 184).

A study of English fashion models from 1967 to 1987 revealed similar findings to those pertaining to American models (Morris, Cooper & Cooper, 1989). According to Morris et al. (1989), although the desired body shape for models had become larger in the waist, it had become increasingly smaller in the bust and hips, and yet increasingly taller.

Research has shown that the current Western society aesthetic ideal of the slim body presents a major dilemma for many women as it is an unattainable goal for most people, including those who pursue healthy and

reasonable levels of dieting and exercise (e.g., Brownell, 1991). Indeed, the gap between women's actual and ideal body size is becoming increasingly more difficult to bridge. Garner et al.'s (1980) study (outlined above), in addition to revealing an increasingly slimmer female body ideal between 1959 and 1979, found that during the same period the secular trend in average weight of women, under 30 years of age, had increased by several pounds. Kuczmarski (1992) reported that the prevalence of obesity in the United States had doubled since 1900 and was continuing to increase. Consequently, as pointed out by Brownell (1991), "the search for the ideal body is one area where culture and physiology collide" (p. 4).

The Western slim body ideal is by no means universally shared. For example, Haines (1987) pointed out that in many Polynesian societies a fat female body is idealized as a symbol of wealth and power. Freeman (1986) pointed out that in Eastern and African societies where pressures for a slim body shape are non-existent, anorexia and bulimia nervosa are almost unknown; however, when women from Eastern and African societies migrate to Western societies and become westernized, anorexia and bulimia nervosa do then occur.

### Dieting

A major Western social practice affecting women's body shape is that of dieting.\* With the consumption of high calorie foods, the emphasis on slimness, and the stigmatization of obesity in Western society, dieting has been accepted by many women as a social norm (Polivy & Herman, 1992; Singh & Rosier, 1989). Singh and Rosier (1989) argued that the 'Everybody

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\* Dieting, as it is referred to here, is defined in the Concise Oxford Dictionary as to "restrict oneself to small amounts or special kinds of food, esp. to control one's weight" (Allen, 1991). This differs from the scientific meaning in which a diet is "the kinds of food that a person or animal habitually eats" (Ibid). The concept of dieting is further outlined, from a more individual perspective, in the 'Individual Factors' section.

does it' dieting syndrome dominates and manipulates Western women's lives.

Driving dieting practices is the multi-billion dollar dieting industry, including the advertizing of dieting, dieting instruction and the marketing of diet foods (Singh & Rosier, 1989). As Singh and Rosier (1989) pointed out, multi-billion dollar industries have a major investment in convincing women that their bodies are unsatisfactory as they are, and that through purchasing such industries' products women can improve their bodies to an acceptable level. Brownell and Rodin (1994) claimed that dieting involves "an industry valued at more than \$30 billion per year that supplies diet books, programs, videos, foods, pills, devices, and the like" (p. 781).

Many women have learned to restrict their food intake in order to reduce their body weight because socially prescribed standards have convinced them that their bodies are unsatisfactory (Epling & Pierce, 1991; Gilbert, 1986; Gordon, 1990; Wolf, 1991). Such standards, commonly portrayed by the advertizing media, have been paralleled by an increased emphasis on the advertizing of dieting. Wiseman et al.'s (1992) research on American women's magazines from 1959 to 1988 found a significant increase in dieting articles during this period. Similarly, Garner et al. (1980) reported that the proportion of space devoted to dieting and slimming articles in six major women's magazines had increased significantly during the decade between 1969 and 1979 compared to the previous decade. Thus sociocultural influences not only teach us how our ideal body should look, but also how we should endeavour to attain this 'ideal'.

From a social learning perspective the onset of dieting behaviour, which has been learned previously, may be evoked by observing a model (or models) dieting. This *response facilitation effect* outlined by Bandura (1973)

demonstrates the powerful impact models have on dieting behaviours. Many people from an early age observe models, both live and symbolic, of others (especially women) dieting. Some are led to believe that dieting is not only desirable, but that it will provide us with slimness and happiness (Gilbert, 1986; Singh & Rosier, 1989).

Epling and Pierce (1991), referring to the slim ideal beauty standard in Western culture, claimed that "social rewards are given when women attempt to achieve this cultural standard by dieting or exercising. A thin woman is told that she looks attractive and she receives a number of social rewards that are not given to other women. Females who weigh more than the ideal standard are criticized and may be told they need to lose a few pounds" (p. 171). Social rewards for slimness, outlined by Epling and Pierce (1991), include, work promotions, dating invitations, and, admiration from significant others.

The majority of young women participate in dieting behaviour at some stage. In a study of university students, Chernin (1985) found that whereas one third of males had ever dieted, three quarters of females had dieted at some time in their lives. This high prevalence of dieting behaviour does not appear to be abating. According to Levine and Smolak (1992), "At any given point in time, 50% to 70% of high school girls are trying to lose weight by dieting, although only 10% to 20% of these girls are statistically overweight" (p. 61). A recent New Zealand study of fourth form adolescent schoolgirls found that 54% had dieted to lose weight. Most had commenced dieting before the age of 13 (Fear, Bulik & Sullivan, 1996). Two large-scale American studies reported that approximately 24% of men and 40% of women were dieting at the time of interview (Horm & Anderson, 1993; Serdula, Collins, Williamson, Anda, Pamuk & Byers, 1993).

Despite the high prevalence of dieting behaviours among Western women, many fail to reach their slim body ideal. For some this is because of the unrealistic goals set. Such unrealistic goals are often learned through observation of fashion models (as outlined above regarding 'body shape').

### Achievement and Self-control

Achievement and self-control, highly valued in industrialized Western society,<sup>\*</sup> are considered to predispose vulnerable individuals to eating disorders (e.g., Garfinkel & Garner, 1982). Several researchers have claimed that in Western culture the "perfect body" symbolizes self-control, where hard work and achievement signal success to the outside world (e.g., Brownell, 1991; Glassner, 1988). The converse of this is the view that obesity symbolizes laziness, indulgence and lack of control. Bordo (1990) claimed that "increasingly the size and shape of the body has come to operate as a marker of personal, internal order (or disorder) - as a symbol for the state of the soul" (p. 94).

Given these social messages it is not surprising that many women believe that the attainment of a thinner body will enhance their personal worth, particularly if they are suffering from a sense of low self-worth. Numerous researchers have claimed that from such a perspective a thin body tends to be viewed as a solution to one's problems, as a route to approval, success and happiness (e.g., Bruch, 1978; Garner & Garfinkel, 1985). However, in striving for the social ideal of the "perfect body", rather than serving as a solution to dissatisfaction and low self-esteem, such problems tend to be enhanced (Garner & Garfinkel, 1985).

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\* Achievement and self-control values are not unique to Western society. For example, such values are also emphasised in Japanese culture.

Crisp and Bhat (1982), in addressing the growing fear of loss of control in people with anorexia nervosa, claimed that as the condition of the patient deteriorates, the fear of pubertal 'fatness' and its potential consequences heightens to the extent that even the smallest weight gain causes alarm. Such minute gains are terrifying to the woman suffering from anorexia nervosa as they rekindle fears of loss of control.

Katzman, Weiss and Wolchik (1986) argued that many women confuse having control of their bodies with having control of their lives, and wrote:

Eating-disordered patients are attempting to enhance their self-esteem and increase their control by controlling their bodies and their diets. Unfortunately, many take either the indulgence in or the avoidance of food to the extreme and thus deprive or nourish themselves calorically while failing to develop a means of feeling competent or comfortable with themselves (p. 144).

### Physical Fitness

Physical fitness, another attribute which is now highly valued in Western culture, has been gaining increased status throughout recent decades. This increased emphasis on physical fitness has been superimposed on the aesthetic ideal of being extremely lean in a growing search for the "perfect body". Wiseman et al. (1992) found American women's magazines displayed a significant increase in exercise articles from 1959-1988. Highly fit and successful athletes serve as important models to many people in our society.

Despite the health benefits that a physically fit body enjoys, Striegel-Moore, Silberstein and Rodin (1986) argued that the then current emphasis on physical fitness may be an aetiological factor in bulimia in that the implication is that involvement in physical exercise is an assured route to the slim, firm female body ideal. However, Striegel-Moore et al. (1986) explained that if a woman attains her body image ideal through exercise this

may become a source of pride and admiration, whereas if the “aerobics instructor look” is not attained a woman may feel that she is a failure, thus engendering feelings of shame and desperation (p. 257).\*

### High Calorie Foods

Social values may conflict, inducing mixed messages. Whereas, on the one hand, slimness is considered desirable, especially for women, on the other hand, the preparation of and consumption of high calorie foods (e.g., rich sauces, deserts, cakes) is also portrayed in a positive manner. Many western women’s magazines picture women preparing high calorie, highly desirable foods (recipes included) while also portraying images of slim fashion models.\*\* Such mixed messages teach us that it is desirable to prepare and enjoy high calorie food, while it is also desirable to be slim. Gilbert (1986), in her book, *The Pathology of Eating*, asserted that the conflicting pressures for slimness in females and for the consumption of high calorie foods are occurring in a climate of increasing affluence and increasing accessibility to a wider variety of easily prepared or ready to eat foods.

In some instances the promotion of high calorie foods involves the employment of slim models (e.g., television advertisements for chocolate bars or ice-cream). Gilbert (1986) criticized media pressure for women to be slim, arguing that “one only has to glance at the advertisements on the television to notice that ... the girl who accepts a box of special chocolates [is] slim” (p. 8).

From a social learning perspective, if we learn from symbolic models that the consumption of high calorie foods is desirable, while to be slim is also desirable, this is a potential recipe for an eating disorder. Many women

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\* For a more extensive outline relating to physical fitness see Participation in Occupations and Activities which Promote Slimness in Individual Factors section below.

\*\* These mixed messages are not unique to Western society.



who have developed anorexia and bulimia nervosa are likely to have observed such models and consequently learned to from them that high calorie foods are desirable, yet to be fat is highly undesirable (Gilbert, 1986). Gilbert (1986) claimed that:

It has been suggested that the exhortation to eat vegetables and to diet now universal in Euro-American culture contrasts strongly with the contradictory habit of marketing high fat, high sugar, high calorie, high salt and low fibre foods as rewards; that in our attempt to save the situation we have become compulsive, even unrealistic, in the extent to which we now advocate dieting and exercise (Mackenzie, 1985). In this climate it is thought by many people that large numbers of women are more predisposed than ever before to the development of eating disorders, in particular anorexia nervosa and bulimia (p. 9).

### 3.2.3 Beyond Sociocultural Factors

Although it can be argued that most women in Western society are exposed to cultural pressures to achieve slenderness, and that dieting has become almost ubiquitous among women in Western society, only a small percentage of women develop eating disorders. Why some women cope with the cultural pressures to be slim, and others do not, has much to do with family and individual factors.

## **3.3 FAMILY FACTORS**

### 3.3.1 Introduction

Family factors, although considered fundamental to the aetiology of eating disorders, are theorized to be interwoven with cultural and individual factors. Therefore, to avoid repetition, this section outlines such factors only as they pertain to families.

Numerous studies have revealed family characteristics which, when considered in light of the sociocultural factors outlined above, may put women at increased risk for anorexia and/or bulimia nervosa. Garfinkel and Garner (1982) argued, in claiming families to be important “culture bearers”, that:

the family represents the first and most significant force in adapting the growing child to his [sic] culture .... Some families will be more vulnerable than others to the slimness pressures and pressures for perfection and performance in the cultural climate (p. 175).

Thus from a social learning perspective some behaviours children may learn directly or by observation from their parents can put them at increased risk for developing eating disorders.

### 3.3.2 Specific Family Factors

#### Demographic and Socio-economic Variables

Having older age parents has been argued as a demographic family factor claimed to predispose a person to anorexia nervosa (e.g., Bruch, 1973; Garfinkel & Garner, 1982; Hall, 1978). However, as the data of such studies were gathered prior to 1980, and have not been replicated with contemporary cohorts, they should be interpreted with caution.

More recently, Dolan, Lieberman, Evans and Lacey (1990) compared family features of 50 women with DSM-III normal body weight bulimia with those of 40 women without eating disorders. It was found that the parents of women with bulimia were significantly older than the parents of controls at the time their daughters (in the study) were born. However, as with the findings associating older parental age with anorexia nervosa, the findings of Dolan et al. (1990) should also be interpreted with caution, for, to date, they do not appear to have been replicated.

There is some debate as to whether there is a higher prevalence of eating disorders in higher socio-economic groups, in comparison to lower socio-economic groups. Some researchers have reported a higher prevalence of eating disorders in families of high socio-economic status *or* a socially upwardly mobile background (e.g., Attie & Brooks-Gunn, 1992; Hall, 1978; Levine & Smolak, 1992). Levine and Smolak (1992) claimed that the upwardly mobile aspect, found to be more common in families of women with eating disorders, tends to be blended with "a concern for appearances, an investment in the outward manifestations of status, and an emphasis on achievement in a variety of roles" (p. 59).

Striegel-Moore et al. (1986) argued that women of higher socio-economic status are more likely than women of lower socio-economic status to emulate closely the ideals of fashion and beauty of their era. Consequently, in contemporary society, they are more preoccupied with achieving a slim body. Striegel-Moore et al. (1986) further argued that a higher prevalence of obesity exists in lower (rather than higher) socio-economic groups, where it has traditionally been less punished.

A high status of families of women with anorexia nervosa was noted by Bruch (1978). Bruch titled her book: *The Golden Cage: The Enigma of Anorexia Nervosa* to convey how women suffering from anorexia nervosa tended to experience their home as a 'golden cage' of privilege and opportunities for success in which they felt undeserving and unworthy.\*

In their large, population-based, female-twin study Walters and Kendler (1995) found a significant association between greater number of years of

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\* Such a background is closely associated with perfectionist tendencies (see later section).

parental education and diagnosis of anorexia nervosa. Further, women with computer narrow and clinical narrow anorexia nervosa had significantly greater college education than women with clinical broad anorexia nervosa.\* Walters and Kendler (1995) claimed that "these findings suggest a greater prevalence of anorexic symptoms among higher socio-economic classes in a general population sample. Our results cannot be due to social class predicting treatment seeking rather than the true risk of illness as we interviewed a general population sample" (p. 68).

In the same population as Walters and Kendler's (1995) study of women with anorexia nervosa, Kendler et al. (1991) found no relationship between social class and diagnosis of bulimia nervosa. Dolan, Evans and Lacey (1989), in a controlled study of a clinical group of women with normal body weight bulimia, also found no association between bulimia and socio-economic status. However, the New Zealand population-based study of Bushnell, Hornblow, Oakley-Browne and Joyce (1990) found women with bulimia aged 18 to 44 years were of lower social class than other women in their age group. The differences in the findings of Dolan et al. (1989) and Bushnell et al. (1990) may reflect the differences in BMIs of women with bulimia in the two studies, as obese women were not included in Dolan et al.'s (1989) study. On the basis of the studies outlined it would seem that a higher prevalence of anorexia nervosa, but not bulimia nervosa, may exist in the higher socio-economic classes than in the lower socio-economic classes.

Despite the emphasis on higher socio-economic families in regard to anorexia nervosa, some studies have found anorexia nervosa to be more prevalent in the lower classes than previously reported (e.g., Thomas & Szmukler, 1985). In 1982 Garfinkel and Garner claimed that anorexia

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\* These terms are defined in Chapter One of this study.

nervosa was "becoming more equally distributed through all social classes" (p. 102). Garfinkel and Garner offer two possible explanations for this. As claimed by Theander (1970: cited in Garfinkel & Garner, 1982), as anorexia nervosa became increasingly common, improved case detection would allow diagnosis of anorexia nervosa in an increased proportion of the lower socio-economic groups. Alternatively, Garfinkel and Garner (1982) argued that attitudes relating to body weight, achievement and control that increase risk for anorexia nervosa are becoming more evenly distributed across differing cultures and social classes.

In light of the debatable findings to date further evidence is necessary to ascertain whether or not anorexia nervosa is more prevalent in the higher socio-economic classes than in the lower socio-economic classes. Walters and Kendler (1995), suggested that further research may reveal social class during adolescence, rather than adult status, to be a risk factor for anorexia nervosa.

### Major Affective Disorder

The most prevalent psychiatric disorder in the relatives of people with anorexia nervosa is major affective disorder. Families of patients with anorexia nervosa have been found to have a higher prevalence of affective disorder than families of healthy controls (e.g., Rivinus, Biederman, Herzog, Kemper, Harper, Harmatz & Houseworth, 1984; Winokur, March & Mendels, 1980). Rates of depression reported by such studies have varied due to methodological differences. For example, Rivinus et al. (1984) found depressive disorders among 9.9% of first-degree relatives of females with anorexia nervosa, compared to 2.4% among first-degree relatives of healthy females. Winokur et al. (1980) found rates of 26% and 10% respectively. In spite of the varying rates reported such studies have suggested that the probability of developing affective disorder is higher for relatives of females

suffering from anorexia nervosa than for relatives of healthy females. Consistent with this, in their large scale twin study Walters and Kendler (1995) found that co-twins of twins suffering from anorexia nervosa were at significantly higher risk for major depression than co-twins of unaffected twins.

Several family studies have also revealed a higher prevalence of affective disorder in first-degree relatives of patients with bulimia than in first-degree relatives of controls (e.g., Hudson, Laffer, & Pope, 1982; Strober, Salkin, Burroughs, & Morrell, 1982). However, the findings of Stern, Dixon, Nemzer, Lake, Sansone, Smeltzer, Lantz & Schrier (1984), namely that there was no higher prevalence of affective disorder in first-degree relatives of patients with bulimia than in first-degree relatives of controls, were a rare exception to this. Hudson, Pope, Jonas and Yurgelun-Todd (1983a) claimed the risk of affective disorder in families of patients with anorexia and bulimia to be similar to that in patients with bipolar disorder, and significantly greater than in families of patients with schizophrenia or borderline personality disorder.

In a controlled family history study of bulimia, the risk for bipolar disorder, major depression and total major affective disorder among first-degree relatives of women with bulimia was found to be similar to that of first-degree relatives of women suffering from major depression but significantly higher than for first-degree relatives of non-psychiatric controls (Hudson, Pope, Jonas, Yurgelun-Todd & Frankenburg, 1987). Hudson et al. (1987) also found the rate of familial major affective disorder to be greater in first-degree relatives of women with bulimia who themselves had a history of affective disorder than in first-degree relatives of women with bulimia who had not suffered from affective disorder. The first degree relatives of both

groups of women with bulimia had higher rates of depression than first degree relatives of non-psychiatric controls.

### Substance Abuse<sup>\*</sup>

The higher rates of substance abuse found in women with bulimia nervosa, compared to healthy controls, have also been found in their families (e.g., Bulik, 1987; Leon, Carroll, Chernyk, Finn, 1985). Misuse of alcohol has also been associated with families of individuals suffering from anorexia nervosa, being found to be more common in fathers of individuals with anorexia nervosa than in the general population (e.g., Hall, 1978; Kalucy, Crisp & Harding, 1977). However, as such studies are scarce, and the data were gathered prior to 1978, they should be interpreted with caution.

### Obesity

An association between bulimia and a history of parental obesity has been investigated in several studies. Such studies have consistently found parents of individuals with bulimia (with anorexia and normal-weight) to have suffered a greater prevalence of obesity (especially maternal obesity) than parents of women with restricting anorexia nervosa (e.g., Garfinkel, Moldofsky & Garner, 1980). Although Garfinkel et al. (1980) found mothers of women with comorbid bulimia and anorexia had a significantly higher prevalence of obesity than mothers of women with restricting anorexia, in most similar studies differences found tended to be non-significant (Pike & Rodin, 1991). Thus the association found between parental obesity and the onset of bulimia is not strongly convincing. Further, studies comparing a history of obesity between parents of women with eating disorders and

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\* Substance abuse in women with bulimia nervosa is outlined in the Individual Factors section.

parents of healthy women have not revealed consistent results (see Pike and Rodin, 1991).

From a social learning perspective, an increased prevalence of obesity in parents of women suffering from bulimia nervosa might explain the high prevalence of bingeing in many women with bulimia nervosa, in that children tend to learn the eating patterns modelled by their parents.\* In making this claim it is argued that a significant proportion of obese people select inappropriate or high calorie foods. Brownell and Rodin (1994) pointed out that "the rising number of obese persons and their degree of overweight cannot be attributed solely to genetics" (p. 783). According to Brownell and Rodin (1994) strong evidence exists of an environmental impact on obesity in that the prevalence of obesity in the United States has doubled since 1900. This heightened prevalence of obesity was attributed to reduced physical activity (partially due to labour-saving devices), and to changes in the food supply. If overeating and/or low rates of physical activity have been acquired, performed and maintained during much of the life of a child it is particularly difficult to break these learned patterns through dieting when a concern about weight heightens (usually in the first instance during adolescence). The associated distress of dieting failure may then set the stage for bulimia nervosa.

### Preoccupation with Food and Dieting

A preoccupation with food has been found to be more common in families of women suffering from anorexia nervosa than in families of healthy women. Researchers have claimed there to be higher rates of parents of patients with anorexia nervosa in food or nutrition related occupations or in nurturant professions ( e.g., Crisp, 1967; Crisp et al., 1974).

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\* Children's eating patterns are also influenced by the media and their peer group.



A preoccupation with food has also been claimed to be more common in families of patients with bulimia. Schwartz, Barrett and Saba (1985) argued that families of patients with bulimia attach special significance to food and eating.

Haines (1987) argued that women with anorexia nervosa often have mothers who are frustrated at their own lack of achievements, and are preoccupied with diets, eating habits, and so forth. Haines (1987) claimed that "this in no way implies that it is the mothers' 'fault', since they, too, are merely reflecting a cultural obsession with a little more intensity than usual" (p. 82).

Studies have found an association between parental dieting and parental attitudes to their offspring's dieting (Pike & Rodin, 1991; Striegel-Moore & Kearney-Cooke (1994). Pike and Rodin's (1991) study of maternal dieting and daughters' dieting habits measured disordered eating by summing three subscales of the Eating Disorder Inventory (EDI; Garner, Olmsted & Polivy, 1983) of Drive for Thinness, Bulimia and Body Dissatisfaction\* to form a Disordered Eating Index. Pike and Rodin (1991) found that mothers of daughters who were eating-disordered were themselves more likely to be eating-disordered. Such mothers had been preoccupied with dieting for a significantly longer period of time than mothers of non-eating-disordered daughters, although BMIs were not significantly different between the two groups of mothers. Further, in comparison to mothers of non-eating-disordered daughters, the mothers of eating-disordered daughters were more likely to have encouraged their daughters to diet, and were also more likely to have judged their daughters as less attractive than such daughters

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\* The EDI has been superseded by the EDI-2 (Garner, 1991). The EDI-2 subscales are identical to the EDI subscales, except for the addition of three new subscales of Asceticism, Impulse Regulation, and Social Insecurity. See Method Chapter below for a full description of the EDI-2.

judged themselves (Pike & Rodin, 1991). Consequently, Pike and Rodin (1991) claimed "our data are consistent with the hypothesis that the transmission of disordered eating may be learned at least partially through the daughter's modeling the mother's behavior" (p. 203).

The social learning perspective argued by Pike and Rodin (1991), of daughters partially learning disordered eating from observing and imitating their mothers, demonstrates the powerful influence of parents as role models to their children. Costanzo and Woody (1985) argued a similar perspective of the transmission of eating problems from parents to children. In criticizing certain "domain-specific parenting styles" Costanzo and Woody (1985) argued that the development of obesity in children is in part a consequence of learning disordered eating patterns from parents. As Pike and Rodin (1991) pointed out, parents who have disturbed eating attitudes and behaviors cannot model healthy eating attitudes and behaviors to their children.

The respondents in Striegel-Moore and Kearney-Cooke's (1994) study of the relation between parental dieting and parental attitudes to their offspring's dieting were sampled from the general population, rather than specifically from families of women with eating disorders. Findings were complementary to those Pike and Rodin (1991) found among parents of women with eating disorders in that those parents who had endeavoured to lose weight by dieting the year prior to the study were significantly more likely to have endeavoured to help their child lose weight than were parents who had not dieted (Striegel-Moore & Kearney-Cooke, 1994). This association held for both mothers and fathers, although a higher percentage of mothers (68%) than fathers (51%) had dieted the year prior to the study (Striegel-Moore & Kearney-Cooke, 1994).

### Perfectionistic and Obsessive Tendencies

As perfectionist tendencies in women with anorexia and/or bulimia nervosa, and in their families, are a major focus of this study, perfectionist tendencies are outlined at length in the Perfectionism Chapter below.

Associated with perfectionistic tendencies, fathers of individuals with anorexia nervosa have been reported to have an increased prevalence of obsessive traits compared to the general population (e.g., Crisp, Harding & McGuinness, 1974; Kalucy et al., 1977). In their study of 56 families in which a member suffered from anorexia nervosa, Kalucy et al. (1977) found that fathers were especially rigid, with high expectations and demands for self-control. Kalucy et al. (1977) claimed that family activity and self-control become overvalued and consequently participation in exercise has a very moral tone in such families.

As these studies reporting obsessive behaviour in fathers of individuals with anorexia nervosa were based on the clinical observations of two overlapping groups of researchers, and are now somewhat dated, they should be interpreted with caution. If similar findings occurred in more recent, methodologically sound studies, this would strengthen earlier claims.

### Sibling Rivalry

Also associated with perfectionistic tendencies in families is sibling rivalry. Although research on siblings of eating disorder patients is scarce, several researchers have associated sibling rivalry, particularly between sisters, with eating disorders (e.g., Hall, 1978; Nygaard, 1990; Sights & Richards, 1984; Stierlin & Weber, 1987).

From a clinical observational perspective, Nygaard (1990) argued that sibling rivalry is a risk factor for eating disorders. Nygaard (1990) claimed that in some patients "the wish to compete with a sibling for the attention of the parents led to voluntary slimming, which after a time turned into AN [anorexia nervosa]" (p. 47).

Hall (1978) observed considerable sibling rivalry in her New Zealand study of the families of the first 50 anorexia nervosa patients aged between 12 and 24 years from a defined geographic area referred to a psychiatrist. According to Hall (1978), information from the women with anorexia nervosa and their families, including interviews with the patients' parents, revealed that "relationships with individual siblings are a major stress factor in some patients" (p. 266).

In a controlled family study, Sights and Richards (1984) administered structured interviews to fathers and mothers (both independently and jointly) of women with bulimia and of healthy women. Sibling competition and comparison was perceived as significantly greater by the parents of the women with bulimia than by the control parents. According to Sights and Richards (1984) the evidence of strong sibling rivalry was greatest between sisters.

Although the various researchers outlined here identified sibling rivalry as a risk factor for anorexia and/or bulimia nervosa, they did not provide conclusive evidence of this. It is speculated here that, although sibling rivalry may exist in such families, other factors, including high personal standards and perceived high parental expectations (associated with sibling rivalry), are more likely to be aetiological factors for anorexia and/or bulimia nervosa.\*

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\* See Perfectionism Chapter below.

Although not directly addressing the issue of sibling rivalry, Wonderlich, Ukestad and Perzacki (1994) found that women with bulimia nervosa reported differential treatment towards a sibling and themselves by their fathers. In comparison to healthy controls, women with bulimia nervosa perceived their fathers as showing less affection and more control towards them than towards their sibling. This leads to the question of whether, in some instances, a woman who feels that her sibling receives more paternal affection than herself is likely to compete for paternal attention, or alternatively seek attention elsewhere.\*

### 3.3.3 Family Interaction Patterns

As the role of the family has considerable impact on the life of a developing child, numerous researchers have claimed some family interaction patterns to be precipitating factors for eating disorders (e.g., Chadda et al., 1987; Dolan et al., 1990; Minuchin et al., 1978; Root et al., 1986; Selvini-Palazzoli & Viaro, 1988).\*\*

The following section primarily outlines the findings of empirical research associated with family interaction in women with anorexia and/or bulimia nervosa. These studies essentially rely on inferences drawn from self-report questionnaire data, rather than from direct observation of family interaction, and thus should be interpreted with due regard for these methodological limitations.

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\* Selvini-Palazzoli and Viaro's (1988) clinical observational studies described some females who develop anorexia nervosa as feeling deprived of parental attention - sometimes because parental attention is directed at another sibling; see Family Studies Chapter below.

\*\* The perspectives of Minuchin et al. (1978), Root et al. (1986), and, Selvini-Palazzoli and Viaro (1988) are outlined in more detail below: see Family Studies Chapter. Each of these three approaches are from a systems perspective and primarily based on clinical observations.

### Low Parental Care/Parental Overprotection

In a controlled family study of women with DSM-III bulimia, Dolan et al. (1990) found that women with bulimia reported their relationships with their parents as very poor. On a Perception of Parents questionnaire (POP; Schutz, 1966) found the scores of women with bulimia to be significantly different to those of controls on the subscales assessing perception of parental attention, and perception of parental affection, in that parents of women with bulimia were perceived as poor on both of these measures (Dolan et al., 1990).

Several studies have used the Parental Bonding Instrument<sup>\*</sup> (PBI; Parker, Tupling & Brown, 1979) for women with anorexia and/or bulimia nervosa, generally revealing that they perceived their parents as lower in care/warmth than did healthy controls (Calam, Waller, Slade & Newton, 1990; Pole, Waller, Stewart & Parkin-Feigenbaum, 1988; Rhodes & Kroger, 1992). Calam et al.'s (1990) study, comparing 98 females suffering from anorexia and/or bulimia (as a combined group) with 242 healthy females, found that both fathers and mothers were perceived as significantly lower in care/warmth by the eating disordered females than by the healthy females. In a similar study, Pole et al. (1988), comparing 56 women with bulimia with 30 healthy women, found that women with bulimia perceived their mothers as significantly lower in PBI care/warmth than did healthy women, and this difference approached significance for fathers. ANCOVA revealed no significant effect from depression. Rhodes and Kroger's (1992) New Zealand study found that women with anorexia and/or bulimia nervosa perceived their parents as lower in care/warmth than did healthy controls. These differences were significant regarding mothers, but not fathers.

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<sup>\*</sup> See Method Chapter below for a full description of the PBI.

Also using the PBI, Palmer, Oppenheimer and Marshall (1988), comparing women with anorexia and bulimia nervosa, with healthy controls, found small but inconsistent differences on the care/warmth dimension. Consequently, contradictory to the conclusions of some studies, Palmer et al. (1988) argued that low parental care/warmth is not characteristic of eating disordered women's perceptions of their childhoods. The contradictory findings of Palmer et al. (1988) may be due to their recruitment of women with eating disorders in Britain, while using comparison data from an Australian study. The cultural differences in the two sets of data may have made comparisons inappropriate. More recently, Kent and Clopton (1992) found no significant differences between 24 women with bulimia nervosa and 24 symptom-free women on any PBI measures. Kent and Clopton's (1992) study is arguably, methodologically weak, in that they classified female student participants as bulimic, sub-bulimic, or, symptom-free, on the basis of responses on self-report instruments. Although relevant self-report instruments provide an indication of the likelihood that a respondent may be suffering from an eating disorder they can not be used as diagnostic tools. Thus, with the exception of Kent and Clopton (1992) and Palmer et al. (1988) these studies have found that women with anorexia nervosa and/or bulimia perceived both their mothers and fathers as less caring/warm than did healthy women, although some of the differences found did not reach significance.

Findings regarding the Protection dimension of the PBI have been less consistent than findings regarding the Care dimension. Palmer et al. (1988) found that women with anorexia and/or bulimia nervosa perceived their parents to have normal levels of protection, whereas Calam et al. (1990) found fathers, but not mothers, were perceived by women with anorexia and bulimia nervosa, as overprotective. Pole et al. (1988), in comparing women with bulimia with healthy women, also found women with

bulimia perceived their fathers, but not mothers, to be overprotective. ANCOVA showed no significant effect for depression. Rhodes and Kroger (1992) found that both mothers and fathers of women with eating disorders were perceived to be more overprotective than parents of healthy women, mothers significantly so. In finding these significant differences for Maternal Protection, Rhodes and Kroger (1992) reported lower PBI Maternal Protection means for healthy controls, and higher PBI Maternal Protection means for eating disordered women, compared to other studies. Whether or not the inconsistencies reflect cultural differences is unclear. As the present study, like Rhodes and Kroger's (1992) study, is of New Zealand women, it may provide valuable information relative to this issue.\*

In a large population-based sample of female twins (outlined above) Kendler et al. (1991), using seven of the 25 PBI items (empirically derived), found significantly lower PBI Paternal Care in females suffering from bulimia nervosa than in other females. No significant findings emerged regarding Maternal Care, or regarding Paternal or Maternal Protection. The different findings between Kendler et al.'s (1991) study and numerous other studies may be partially due to different sampling methods. A population based study such as Kendler et al.'s (1991) is likely to include less severe cases of bulimia nervosa than the clinically based samples of other studies. Clinically based samples may include more family psychopathology than population based samples.

Using the data from Kendler et al.'s (1991) female twin study, Walters and Kendler (1995) reported PBI findings for women with anorexia nervosa. Maternal overprotectiveness was found to be associated with broadly

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\* Overprotection in families of women with anorexia and/or bulimia was reported as characteristic in clinical observational studies from a systems perspective; see Family Studies Chapter below.



defined anorexia nervosa.\* Paternal overprotectiveness was significantly associated only with definite diagnosis of anorexia nervosa (N=11). There were no significant findings on the PBI Care dimension. However, as Walters and Kendler's (1995) data (from Kendler et al., 1991) included only 7 of the 25 PBI items, and the definite diagnosis of anorexia nervosa included only 11 cases, the findings should be interpreted with caution.

The findings of maternal and paternal overprotection by studies using the PBI for women with anorexia and/or bulimia nervosa suggest that the PBI Protection dimension is tapping something similar to the family environment characteristic of overprotection found in clinical observational studies (e.g., Bruch, 1973; Minuchin et al., 1978; Root et al., 1986; Selvini-Palazzoli & Viaro, 1988) (outlined below). According to Walters and Kendler (1995), PBI maternal and paternal overprotection (i.e., high protection scores) in women with anorexia nervosa supports clinical observations that "the typical person with anorexia nervosa comes from an inward family and is often overprotected and highly controlled" (p. 69).

#### High Conflict/Low Cohesion/Low Expressiveness

High conflict levels are characteristic of families of women with bulimia nervosa (e.g., Bulik et al., 1989; Root et al., 1986). Bulik et al. (1989), in addressing the issue of childhood sexual abuse, referred to the high prevalence of disturbance in families of women with bulimia nervosa. Root et al. (1986) (from a clinical observational perspective, outlined below), in describing 'chaotic' families as one of three characteristic family types of women with bulimia, claimed that high conflict typifies chaotic family environments.

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\* Broadly defined anorexia nervosa included definite cases and more broadly defined cases in which not all DSM-III-R diagnostic criteria were met. Of the 2,163 interviewed twins, 11 met diagnosis for computer narrow anorexia nervosa, 24 met diagnosis for clinical narrow anorexia nervosa, and 45 met diagnosis for clinical broad anorexia nervosa (see Chapter One of this study for definitions of these categories).

Several studies using the Family Environment Scale<sup>\*</sup> (FES; Moos & Moos, 1981) found that women with anorexia and/or bulimia nervosa perceived their family environments as significantly higher in conflict and significantly lower in cohesion, expressiveness, and active recreational orientation than families of normal women controls (e.g., Johnson & Flach, 1985; Ordman & Kirschenbaum, 1986; Shisslak, McKeon & Crago, 1990; Stern, Dixon, Jones, Lake, Nemzer & Sansone, 1989). Stern et al. (1989) reported that the most consistently abnormal finding among the eating disorder subjects was their perceptions of their families as being low in expressiveness. These findings indicate that women with anorexia and bulimia nervosa have difficulty in the three relationship subscales of the FES.<sup>\*\*</sup> Some of these studies also found lower independence in the women with bulimia compared to normal women controls (Johnson & Flach, 1985; Ordman & Kirschenbaum, 1986). Johnson and Flach (1985) found that high expectations for achievement and poor organization were associated with higher severity of bulimia symptoms.

In spite of some studies reporting difficulties in the three facets of the FES relationship dimension, for families of women with anorexia and/or bulimia nervosa, other researchers have disputed this notion (Kent & Clopton, 1988, 1992; Rybicki, Lepkowsky & Arndt, 1989; Thienemann & Steiner, 1993). Kent and Clopton's (1988, 1992) studies are, arguably, methodologically weak, in that they classified participants as bulimic, sub-bulimic, or, symptom-free, on the basis of responses on self-report instruments (see criticism, above). Thienemann and Steiner's (1993) selection of respondents also warrants criticism in that all respondents were

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<sup>\*</sup> See Method Chapter below for a full description of the FES.

<sup>\*\*</sup> The Relationship dimension of the FES, associated with interpersonal relationships, comprises of Conflict, Cohesion, and Expressiveness. See Method Chapter below for a full description.

adolescents. Thienemann and Steiner (1993) admitted that "subjects were adolescents who most likely had not fully reached cognitive or emotional maturity" (p. 47). Moreover, rather than including a healthy age-matched control group, Thienemann and Steiner (1993) compared the scores of eating disorder groups with scores for the FES normative population. However, Thienemann and Steiner (1993) also included a control group suffering from depression. Although there were no significant differences between eating disorder groups and the depressed group on FES measures, when subjects were grouped according to severity of depression, independent of diagnosis, the depressed girls were significantly more psychopathological on FES measures than the non-depressed girls. This indicates that depression may influence FES scores.\*

Thienemann and Steiner's (1993) findings indicate that difficulties in family relationships are not specific to families of individuals with eating disorders. Indeed, Moos and Moos (1986), in acquiring normative samples for the FES, found distressed families, compared to normal families, were generally lower on cohesion, expressiveness, independence, and intellectual and recreational orientation and higher on conflict and control. Moos and Moos (1986) also cited research claiming similar findings for families with at least one member in counselling or psychiatric treatment.

Low cohesion, independence and organization and high achievement orientation have been associated with high suicidal ideation (Friedrich, Reams & Jacobs, 1982). It seems interesting that family variables associated with suicide ideation are also associated with anorexia and/or bulimia nervosa (outlined above; e.g., Johnson & Flach, 1985), especially as suicidal

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\* An association between depression and eating disorders has been outlined above. Depression will be used as a covariate in this study and may account for some of the variance in the association between FES measures and anorexia and/or bulimia nervosa.

tendencies are common in women with anorexia nervosa.<sup>\*</sup> This is also interesting, in light of the reported association between perfectionism and suicide,<sup>\*\*</sup> as perfectionism and achievement orientation are likely to share some similar characteristics.

Although several researchers have used the FES for women with diabetes, the primary focus of such studies has been the relationship between the levels of conflict and cohesion in families of children with insulin-dependent diabetes and the relationship of this to adherence with treatment and adjustment to diabetes. No published studies using the FES with participants suffering from diabetes appear to have addressed the issue of anorexia and/or bulimia nervosa.

#### Situational Factors/Parent-Child Bond

Situational factors can not be overlooked in the aetiology of anorexia and bulimia nervosa. Several researchers have argued that situational factors can trigger the onset of an eating disorder (e.g., Epling & Pierce, 1991; Garfinkel & Garner, 1983). Examples of such factors cited by researchers include break-up of the family, death of a parent, sibling promiscuity and pregnancy in a parent or sibling (Epling & Pierce, 1991). Attendance at a preparatory or boarding school has also been cited as a precipitating factor for eating disorders (e.g., Striegel-Moore, Silberstein, & Rodin, 1986).

In understanding why some women in the same culture faced with a family crisis develop eating disorders, and others do not, it is important to consider the interaction of situational factors with individual and family factors that

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<sup>\*</sup> Sullivan (1995; see Chapter One above) found 27% of deaths of women suffering from anorexia were reported to be from suicide.

<sup>\*\*</sup> In several studies (outlined later) perfectionism was reported as an important factor associated with suicidal tendencies (e.g., Delisle, 1990; Farrell, 1989; Hayes & Sloat, 1989; Weisse, 1990).

predispose a woman to an eating disorder. A common thread argued to exist among the situational factors which have been outlined here, is that each of these crises is likely to weaken the bond between the daughter and at least one parent. Although a weakening of the parent-daughter bond has not been specifically addressed by researchers in relation to the situational factors they outline, it is hypothesized here to be a precipitating factor for an eating disorder.\*

The argument for a weakened parent-child bond as a precipitating factor for eating disorders is partially supported by Russell and Gilbert (1992) who claimed that early object loss increases psychogenic vulnerability to late-appearing (tardive) anorexia nervosa. For women with bulimia, indirect evidence of a weakened parent-child bond can be extrapolated from a study by Pyle, Mitchell and Eckert (1981). An association between traumatic events and the onset of bulimia was found by Pyle et al. (1981) in 30 out of 34 cases of women with bulimia. The most common kind of trauma cited was "loss or separation from a significant person in their life" (p. 61). Examples of such loss cited by Pyle et al. (1981) included 'leaving home', 'temporary absence of parent' and 'divorce'.

Further in relation to the parent-daughter bond, Guidano & Liotti (1983), from a clinical perspective, reported considerable agreement with Minuchin et al.'s (1978) clinical observations of four clusters of interaction patterns in families of anorexia nervosa patients.\*\* Also, with anorexia nervosa patients, Guidano and Liotti (1983) "almost always found experiences of *disappointment in the emotional bond with their fathers* during adolescence or preadolescence" (p. 287). This disappointment followed a

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\* This hypothesis is supported by the clinical observations of Selvini-Palazzoli and Viaro (1988), outlined at length in a later section.

\*\* See Family Studies Chapter below for a detailed outline of Minuchin et al.'s (1978) perspective.

'good' initial relationship with the father in an enmeshed family. Guidano and Liotti (1983) further argued that Bruch (1973) also found a peculiarity of fathers of patients with anorexia indicating daughters' disappointment with their fathers was likely to have occurred: "The father, despite social and financial successes which were often considerable, felt in some sense 'second best'" (Bruch, 1973, p. 82).

Difficulties in father-daughter relationships during adolescence have also been demonstrated in empirical studies. Using structured interviews, Sights and Richards (1984) compared parents of women with bulimia with parents of healthy women regarding their perceptions of family relationships. Assessing fathers' and mothers' perceptions (independently and jointly) it was found that relationships for women with bulimia differed significantly from relationships of healthy controls in that women with bulimia were perceived by their parents to have a close relationship with fathers in early childhood years, followed by an increasingly distant father-daughter relationship during adolescence.

Perceptions of women with bulimia have echoed the perceptions of parents regarding father-daughter relationships. In a study of families of 50 women with DSM-III bulimia, Dolan et al. (1990) found that women with bulimia more often than healthy controls described their fathers as "distant" and spent very little time with their fathers during their teenage years.

The finding of Wonderlich et al.'s (1994) controlled study, that women with bulimia nervosa perceived their fathers as less affectionate and more controlling towards them than towards their sibling (see Sibling Rivalry above), may provide further evidence of difficulties in the parent-child bond for women with bulimia nervosa. Indeed, Wonderlich et al. (1994)

concluded that the father-daughter relationship may be a nonshared environmental factor associated with bulimia nervosa.

Another consequence of a distancing of the parent-daughter relationship is that the daughter is likely to seek more companionship with her peers than she may do otherwise. Thus the typical increase in peer influence during adolescence may be heightened by a distancing of the parent-daughter relationship.

Peer influence has been suggested as a precipitating factor for eating disorders. For example, Schwartz, Thompson and Johnson (1981; cited in Striegel-Moore et al., 1986) found that in almost all instances where a college woman purged she knew another woman student who purged, whereas a college woman who did not purge rarely knew anyone who purged. In addition to peer influence, the role of situational factors is highlighted in such circumstances. Also, from a social learning perspective, it seems that women usually learn their purging behaviour from other women. Indeed, Striegel-Moore et al. (1986) argued that "a positive feedback loop" is established in that the higher the prevalence rate of women with disordered eating the more likely it is that even more women will engage in disordered eating.

### 3.4 INDIVIDUAL FACTORS

This section outlines factors associated with anorexia and/or bulimia nervosa as they pertain to individuals. The first part outlines personal and developmental factors followed by an outline of individual cognitive and psychological factors.

### 3.4.1 Personal and Developmental Factors

#### Genetic Predisposition

Research into the possibility of a genetic predisposition to eating disorders has occurred among first-degree relatives of probands, and in twin studies. Several researchers have found a familial clustering of anorexia nervosa (e.g., Holland, Sicotte & Treasure, 1988; Strober, Lampert, Morrell, Burroughs & Jacobs, 1990). Strober et al. (1990) found the prevalence of anorexia nervosa to be eight times greater in female first-degree relatives of women suffering from the disorder compared to non-psychiatric and psychiatric controls. This was argued as evidence for an intergenerational transmission of anorexia nervosa.

Studies of the familial transmission of bulimia nervosa have been less consistent than studies of the familial transmission of anorexia nervosa. Kendler et al. (1991) claimed that the four such previously published studies had conflicting findings as to the presence or magnitude of the familial aggregation for bulimia nervosa. Only one such study provided robust evidence for the familial aggregation of bulimia nervosa (Kassett, Gershon, Maxwell, Guroff, Kazuba, Smith, Brandt & Jimerson, 1989). Kendler et al. (1991) argued that the inconsistent findings of these studies was likely to be due to methodological limitations, such as selection bias in ascertaining individuals through psychiatric treatment centres, and a lack of differentiation between male and female relatives.

Numerous twin studies have attempted to find evidence of a hereditary component in the aetiology of eating disorders, but their findings to date have also been inconclusive (e.g., Fichter & Noegel, 1990; Hsu, Chesler & Santhouse, 1990; Kendler et al., 1991; Vandereycken & Vreckem, 1992; Walters & Kendler, 1995). In their large, population-based, twin study,



Kendler et al. (1991) found higher concordance rates for bulimia in monozygotic than dizygotic female twins, consistent with Fichter and Noegel (1990) and Hsu et al. (1990). Kendler et al. (1991) claimed that the risk for bulimia was not associated with zygosity, similar childhood environments, or frequency of contact as adults. Although it was suggested that about 50% of the variance may be attributable to additive genetic factors and 50% to individual-specific environmental factors, Kendler et al. (1991) claimed that, due to the small sample size of affected twins, this finding should be interpreted with caution. Kendler et al. (1991) explained that "although we do find evidence consistent with genetic influences on risk for bulimia, the evidence against an effect of familial-environmental factors is relatively weak" (p. 1635).

In the same twin sample as Kendler et al. (1991), Walters and Kendler (1995) found that co-twins of twins suffering from anorexia nervosa were at significantly higher risk for the disorder than co-twins of unaffected twins. Walters and Kendler (1995) also found a weak association for those twins who were treated more similarly as children being more likely to be concordant for a lifetime history of anorexia nervosa as adults. Walters and Kendler (1995) concluded that due to the low prevalence of anorexia nervosa in the general population, it is difficult to ascertain whether the familial component of anorexia nervosa is genetic or environmental. "The small amount of available information is more consistent with a familial environmental explanation, but we would hesitate to base any firm conclusions on these data" (Walters & Kendler, 1995, p. 70).

As yet no twin study of women with anorexia and/or bulimia nervosa has assessed concordance for anorexia or bulimia nervosa in twins reared apart. Although difficult, such research would contribute strong evidence on the nature/nurture debate in relation to eating disorders.

The nature/nurture debate has been further confounded by studies of twins reared in the same environment who have shown a complete lack of concordance for eating disorders. For example, Waters, Beumont, Touyz and Kennedy (1990) in comparing 11 twin and 11 non-twin female pairs where one of each pair was suffering from anorexia nervosa, found in *no* instance was there evidence of concordance for anorexia nervosa in the co-twin. Mothers of the female sibling pairs (twin and non-twin) indicated (in interview sessions) that the daughters with anorexia nervosa had significantly more eating problems during childhood than their sisters. Thus it may be that an individual-specific environment is more relevant to the aetiology of anorexia and/or bulimia nervosa than a shared environment. From a social learning perspective, it would be useful if such studies had examined the differential treatments of twin pairs by their parents during their development, or other differences in social experience. However, such an ideal is not likely to be achieved because of the enormous difficulties inherent in such research.

### Being Female

All of the Western socio-cultural values discussed above (e.g., slimness) are particularly pertinent to adolescent girls and women. Being female has been claimed to be a predisposing factor for anorexia nervosa and/or bulimia nervosa (e.g., Crisp, 1970; Epling & Pierce, 1991; Striegel-Moore et al., 1986). Being female, as a precipitating factor for eating disorders, has been fundamentally linked to sociocultural factors.

From a social learning perspective, Epling and Pierce (1991) claimed that most observational learning is gender orientated. Media influences are more directed at women than men with regard to fashion advertising, food purchasing and preparation, make-up, and dieting. Social models that

suggest being thin is desirable are usually young women. According to Epling and Pierce (1991) "social reinforcement contingencies induce many men to exercise but the pressure to diet is not as extreme as for women" (p. 171).

It is not surprising that the pressure to diet is greater for females than males, as adolescent females have greater body fat than adolescent males (Levine & Smolak, 1992; Marino & King, 1980). Whereas prior to puberty females have 10% to 15% more body fat than males, following puberty females have almost double the body fat of males (Marino & King, 1980). This developmental attainment of increased female body fat coincides with societal pressures (in Western cultures) for females to conform to unrealistic standards of slim appearance (Gray, 1988).

Gray (1988) found, in her interviews with a cross-section of nearly 300 New Zealand adolescents from about 20 different schools, that the slim female body image portrayed in the media was considered as 'ideal' by adolescent boys as much as by girls. In understanding Gray's (1988) findings from a social learning perspective, it would seem that both males and females are influenced by social models of thin young women, and that young Western men tend to believe thin women are more attractive than women who are not thin. However, an American study by Fallon and Rozin (1985), found that men tended to select a heavier ideal female figure than women believed men to find attractive. In a similar study, among Australian respondents, women selected a significantly thinner photograph of what they thought their male partner would prefer them to look than that selected by their male partner (Huon, Morris & Brown, 1990). Thus, it may be an exaggerated belief of many women that men generally find very slim women more attractive than less slim women. Regardless of the perceptions of men, women who place a high value on men's perceptions of

them, and who also believe that men find slim women more attractive than less slim women, seem more likely to endeavour to match the standards of these slim ideal beliefs.

Beliefs held by males and females regarding women's body shapes have been argued to be carried over into dating relationships. Several studies have found women's appearances to be more important than men's in dating relationships (e.g., Berscheid, Dion, Walster & Walster, 1971; Krebs & Adinolfi, 1975; Stroebe, Insko, Thompson & Layton, 1971). Rodin, Striegel-Moore and Silberstein (1985: cited in Striegel-Moore et al., 1986) claimed preliminary evidence of higher prevalence rates of bulimia among women attending schools where dating has a high profile rather than schools where dating has a lower profile. However, in light of the findings of Fallon and Rozin (1985), of women's inaccurate beliefs of males' perceptions of women's body shapes, it would seem inappropriate to attribute this increased prevalence of bulimia to male preferences regarding women's body shapes. It may be that the belief of many women, that men find very slim women more attractive, is more of an aetiological factor for bulimia nervosa than are the actual preferences of males.

Several studies have addressed the concept of femininity in relation to Western women's pursuit of thinness (e.g., Brownmiller, 1984; Guy, Rankin & Norvell, 1980; Lakoff & Scherr, 1984). Lakoff and Scherr (1984) found that many women who were successful professionally, and had abandoned many traditional roles and values of womanhood, still worried about their body shape and pursued the thin female 'ideal'. Brownmiller (1984) argued that in a man's world femininity gives a woman a "competitive edge". According to Striegel-Moore et al. (1986) femininity may be a difficult pursuit for women to abandon altogether, "and *looking* feminine, even while displaying 'unfeminine' ambition and power, may serve an

important function in a woman's sense of self as well as in how she appears, literally, to others" (p. 249).

Cognitive differences in male and female self-concepts have also been claimed by several researchers. For example, it is argued that whereas for men independence and a sense of agency are more pertinent to self-concept, women essentially judge themselves in relation and connection to others (Gilligan, 1982; Singh & Rosier, 1989). Singh and Rosier (1989), in their book, *No Body's Perfect*, argued that "women's sense of identity is based on external criteria" (p. 26). Thus women, more so than men, are sensitive to comments from others regarding the shape of their bodies and readily internalize societal messages on the importance of female attractiveness (Singh & Rosier, 1989).

The gender differences found in body image have also been claimed to be perpetuated by parents. Parents of overweight daughters have been reported to show more concern about their weight, and were more likely to restrict food access, than were parents of overweight sons (Costanzo & Woody, 1979). Striegel-Moore and Kearney-Cooke (1994) found that parents were more inclined to praise their daughter's physical appearance than their son's. Striegel-Moore and Kearney-Cooke (1994) also found that, although the boys in their study were generally heavier than the girls (measured by BMI), parental perceptions were that daughters were fatter than sons. This difference in perceptions was particularly pertinent in parents of adolescent offspring. Consequently Striegel-Moore and Kearney-Cooke (1994) argued that parents may compare their daughters with the unrealistic thin female body ideal of Western society culture, thus having distorted judgements of body size.

### Adolescence

Adolescence has been defined in numerous ways, usually emphasizing a common theme of a developmental stage of adjustment between childhood and adulthood. Dusek (1987) offers a comprehensive definition of adolescence as "the stage in which the individual is required to adapt and adjust childhood behaviours to adult forms that are considered acceptable to his or her culture" (p. 5).

Adolescence has been found to be the highest risk period for the onset of eating disorders. Research findings suggest that the onset of anorexia nervosa usually occurs within seven years of menarche. For example, in a study of 102 consecutive patients with anorexia nervosa, Crisp, Hsu, Harding and Hartshorn (1980) found that for 82% the onset of the illness occurred within seven years of menarche. Morgan and Russell (1975) found that onset of the illness was within seven years of menarche for 92% of anorexia nervosa patients. Women suffering from anorexia nervosa typically present for treatment at between 18 and 20 years of age (Vandereycken & Pierloot, 1983). However, anorexia nervosa also occurs in other age groups, with some patients first presenting for treatment at less than 10, or over 25, years of age (Garfinkel & Garner, 1982). In some instances, the older age presentation is because the anorexia nervosa has existed undiagnosed for years (Sours, 1980). Studies of women with bulimia nervosa have found that binge eating usually commences in the mid-teen years with the onset of purging about a year later (e.g., Dolan, Lieberman, Evans & Lacey, 1990).

As the onset of both anorexia and bulimia nervosa are most likely to be during the middle to late adolescent stage of development, Attie and Brooks-Gunn (1992), argued that these disorders are closely associated with the biological changes and psychosocial challenges with which adolescents

must cope. Thus, an important issue in the understanding of anorexia and bulimia nervosa is that, in recognising that characteristics of the culture, the family and the individual all play a role in the aetiology of eating disorders, it is also essential to consider these factors within the developmental context of adolescence.

Normative developmental challenges of early adolescence include the lessening of childhood dependency on parents as the child develops towards increased psychological and physical autonomy, the development of sexual relationships, the internalization of achievement values, and the development of a stable, well controlled self-structure for regulation of emotions and self-esteem. During later adolescence the development of intimate relationships, and identity independent of family relationships becomes a normative challenge (Attie & Brooks-Gunn, 1992).

Gray (1988), in outlining New Zealand adolescents' development, pointed out that the need for excitement is especially strong during adolescence, and "expectations are raised by the media. The glamour and speed of life on television, in videos and at the movies are matched only by the lack of any apparent consequences" (p. 81). Gray (1988) also pointed out that adolescents need to weigh their parents' values against other pressures such as media messages, feelings of boredom, lack of confidence and self-esteem, and peer pressures. Adolescence is for many individuals a time of experimentation with many new and sometimes risky behaviours, including alcohol consumption, cigarette smoking and dieting. Consequently, adolescence is a high risk period for numerous problems including eating disorders.

Ackerman (1970) claimed that a common underlying factor in all adolescent disorders, whether they be overtly or subtly expressed, is the adolescent's struggle to discover his/her identity in a chaotic society. Although the

traditional view is that adolescents, in their search for identity, are inevitably involved in "storm and stress" relationships with their parents, research indicates that this is not necessarily the case. However, according to several researchers, family conflict levels peak during adolescence (e.g., Smetana, 1988; Steinberg, 1987). Smetana's (1988) study found that although adolescent-parent conflicts were usually concerning seemingly unimportant issues (e.g., appearance, curfew hours and hygiene) they represented an adolescent's attempts to gain more control over aspects that s/he perceived should be under his/her jurisdiction, rather than that of his/her parents.

The fundamental bodily changes of adolescent physical development foster increased attention to physical appearances. These changes (e.g., breast development, increased bodily fat) have been outlined above (see *Being Female*). In conjunction with this rapidly changing physical self, which requires a new body image to be integrated into one's self-concept, societal pressures on females to conform to unrealistic standards of slim appearance are particularly powerful during the adolescent stage of development. Thus adolescence represents a stage of development when pressures on perceptions of body image and appearance are paramount. Gray (1988) found, in her interviews with a wide range of New Zealand adolescents, that adolescent females tend to receive messages, not only from their peers, but from adult women around them, which are not conducive to realistic perceptions or expectations of their own body shape or to enjoying themselves for what they are. Gray (1988) also found that, although girls of all ages were worried about their body image, the pressure to achieve the cultural ideal of slimness seemed especially powerful between the ages of 12 and 15 years.

This mismatch between physiology and culture sets the stage for normative body dissatisfaction, in adolescent females regardless of their body weight.



Also during this time females are likely to be forming their first sexual relationships, thus further intensifying a concern for personal appearance. This in turn increases the salience of body image, and body dissatisfaction, usually accompanied by dieting.

Huon (1994) claimed that the preoccupation with dieting commonly found in female adolescent culture often commences before puberty and increases linearly with age, peaking at the age of 18 years. Huon (1994), using a self-report questionnaire to ascertain schoolgirls dieting and weight behaviours, found those who wanted to lose at least 7 kilograms, and were frequently dieting, were more likely to suffer from "severe" binge eating disturbances than those who were content with their weight and "never" or "rarely" dieted.

Gray's (1988) interview study of adolescents found that "Few dieted by changing their eating habits. They simply missed out meals altogether, then resorted to junk food when the hunger pangs got too strong" (p. 97). Clearly, such eating patterns put adolescent females at increased risk for developing anorexia and bulimia nervosa.

Haines (1987) also addressed the issue of the female adolescent dieting culture. Haines (1987) pointed out that a fundamental problem in identifying the cause of anorexia nervosa is that numerous teenage females tend to share the attitudes to food, weight and growing up that have been considered pathological in women with anorexia. This was clearly evident in Hall's (1978) New Zealand study of anorexia nervosa patients.

Although the adolescent stage of development represents the period of greatest risk for the onset of anorexia and/or bulimia nervosa, particularly for vulnerable females, it is important to recognize that not all eating

disorders develop during adolescence. Fortunately, for most adolescent females any hypersensitivity to physical appearance is a passing phase. Serious psychological disorders such as anorexia and bulimia nervosa are found in only a small minority of adolescents.

In addressing the issue of adolescent pathology, Ackerman (1970) argued: "The disordered behavior of the adolescent needs to be understood not only as an expression of a particular stage of growth, but beyond that, as a symptom of parallel disorder in the patterns of family, society, and culture" (p. 80). From this perspective Ackerman (1970) argued that adolescent pathology is a symptom of family disorder in which the family is positioned between the individual and culture, and transmits through its members the disorders that characterize their culture.

#### Participation in Occupations and Activities which Promote Slimness

Participation in certain sporting and cultural activities increases the likelihood of the development of an eating disorder. An increased prevalence of anorexia nervosa has been found in individuals whose professions and/or physical activities are associated with a slim figure such as models, air hostesses and jockeys (Andersen, 1985).

Researchers have identified athletes as being a high risk group for eating disorders (Black, 1991; Brownell & Rodin, 1992; Pasman & Thompson, 1988; Rowley, 1987; Sykora, Grilo, Wilfley & Brownell, 1993). Many people attempting to imitate successful athletic models overlook, or choose to ignore, the fact that increased levels of physical activity require increased levels of caloric intake in order for the body to maintain a similar weight to that when less active.

In a review of the literature associated with eating disorders in athletes, Brownell and Rodin (1992) claimed that most studies found athletes generally had more eating-related problems than the general population. In particular, athletes in sports with specific weight requirements or expectations of appearance (e.g., wrestling or gymnastics) were found to have a higher prevalence of eating related problems than athletes in sports where weight is less of an issue (Brownell & Rodin, 1992).

Researchers have also found dancers to be a high risk group for eating disorders (e.g., Brooks-Gunn, Warren & Hamilton, 1987; Garner & Garfinkel, 1980; Sours, 1980; Wolf, 1991). Wolf (1991) asserted that "of dancers, 38 percent show anorexic behavior. The average model, dancer, or actress is thinner than 95 percent of the female population" (p. 185).

As the majority of highly successful dancers are extremely slim, their slim bodies serve as an important models to emulate in the dancing world. The low weight achieved is usually considered by the dancer and their instructor as a "perfect dancing weight". Dance instructors may pressure their trainees to achieve certain weights (Kirkland, 1986; Vincent, 1979). Kirkland (1986), in the autobiography of a professional ballet dancer who developed anorexia and bulimia nervosa, likened the New York ballet scene to a "concentration camp", in which the pressure to be thin was excessive.

The ballet environment was also described as excessively competitive and precipitating of eating disorders by Vincent (1979), a psychiatrist and former dancer. In his book, *Competing with the Sylph*, Vincent (1979) condemned ballet instructors for pressing students into becoming dangerously thin, often while still physically maturing. Vincent (1979) described widespread excessive dieting, vomiting and laxative abuse among aspiring ballerinas

with such behaviour being to some extent socially acceptable in ballet environments.

Garner and Garfinkel (1980) found a higher prevalence of anorexia nervosa among dancers in highly competitive settings than among dancers in less competitive settings. However, music students in highly competitive settings did not have as high prevalence of anorexia nervosa as dancers in highly competitive settings. Thus Garner and Garfinkel (1980) argued that the pressure to achieve a slim figure for those whose professions require slimness, combined with a highly competitive environment, is a risk factor for anorexia nervosa.

### Overweight and Dieting

It is widely accepted that a history of dieting is likely to precede the onset of anorexia and/or bulimia nervosa (e.g., Epling & Pierce, 1991; Polivy & Herman, 1985; Wolf, 1991). A drive for thinness has been described as a fundamental feature of eating disorders (e.g., Bruch, 1973). Research using the EDI, or EDI-2, has found women with anorexia and/or bulimia nervosa have a significantly greater drive for thinness than healthy women (e.g., Garner, Garner & Van Egeren, 1992; Gleaves & Eberenz, 1993).\*

Researchers have found a high proportion of women with anorexia nervosa and/or bulimia reported being mildly overweight prior to the onset of the disorder (e.g., Crisp, 1983). A history of wide fluctuation in weight, dieting or frequent exercise\*\* have been cited as predisposing factors to bulimia nervosa (e.g., Kendler et al., 1991; Pyle, Mitchell & Eckert, 1981).

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\* Drive for Thinness is a subscale of the EDI-2 (Garner, 1991). See Method Chapter below for a description of the EDI-2.

\*\* Fluctuation in weight, dieting, and frequency and duration of exercise, can be assessed from the EDI-SC. See Method Chapter below for a full description of the EDI-SC.

In challenging the purported benefits of dieting, several researchers have raised concerns of the effects of repeated dieting on health and psychological functioning (e.g., Brownell, 1991; Polivy & Herman, 1983, 1992). Dieting has been claimed by such researchers to create more problems than it solves. Emotional, cognitive and eating disturbances, including eating disorders, have been associated with dieting (e.g., Polivy & Herman, 1992).

Research involving women who repeatedly diet has largely focused on weight cycling (yo-yo dieting) (e.g., Brownell, 1991; Brownell, Greenwood, Stellar & Shrager, 1986). With the growth of the diet industry, weight cycling has been found to be increasingly prevalent in Western culture. Brownell (1991) defined weight cycling as "repeated cycles of weight loss and regain" (p. 9). As some animal research indicates weight gain to occur much more rapidly following a second diet, as opposed to a first, it has been argued that women who have a prolonged history of successive dieting attempts are at increased risk for bulimia (Striegel-Moore et al., 1986).

Whether or not weight cycling is harmful has become a subject of debate. Earlier reports by Brownell and associates (e.g., Brownell et al., 1986) claimed that when weight cycling occurs the metabolic system adapts to weight loss by becoming more efficient, thus impeding weight loss. Consequently, with each successive diet weight loss was considered to occur more slowly and weight regain more rapidly. Thus dieting has been associated with the aetiology of weight gain and obesity (e.g., Brownell et al., 1986). Those women who have lower basal metabolic rates from the outset were considered to be particularly prone to this problem (Wooley, Wooley & Dyrenforth, 1979). It has also been argued that as women have lower metabolic rates than men, women are more likely than men to experience difficulty in their efforts to lose weight (Striegel-Moore et al., 1986).

More recently Brownell and Rodin (1994) have questioned earlier claims of the harmfulness of weight cycling. Brownell and Rodin (1994) argued that the initial hypothesis of the metabolic system becoming more efficient with progressive diets has been supported by the findings of some studies but not others. Consequently, Brownell and Rodin (1994) argued that if such metabolic efficiency occurs at all it is at best inconsistent. This conclusion is supported by the findings of other researchers (Reed & Hill, 1993; Wing, 1992, 1993).

In addition to the negative physiological consequences of dieting there are psychological effects. Several studies have found that the more restrictive a person's diet, the more likely they are to crave foods (especially denied foods), and to eventually succumb to these cravings (e.g., Leon, Carroll, Chernyk & Finn, 1985; Polivy & Herman, 1985). Consequently, food restriction has been purported as a potential causal agent of bingeing (Polivy & Herman, 1985, 1987).

This relationship between food restriction and bingeing has been demonstrated in a series of laboratory experiments by Polivy and Herman (e.g., Herman & Polivy, 1979, 1980; Polivy & Herman, 1976). In these experiments Polivy & Herman compared a group of students who frequently dieted (labelled as "restrained eaters") with a group of non-dieting students according to their levels of food consumption. Participants were led to believe that the experiments pertained to "taste discrimination". Participants were initially required to consume one or two milkshakes. Following the consumption of the milkshake(s) participants were offered food with the instruction to "eat as much as you like". Associated with this, participants were required to fill out rating scales about the taste of the food. Polivy and Herman found that, as expected, non-dieting participants tended to sample less food following the consumption of two milkshakes than

following one. On the other hand, the dieting participants demonstrated the opposite trend in that they consumed *more* food following two milkshakes than following one. As a result of their findings Herman and Polivy (1979, 1980) concluded that, whereas non-dieters regulate their appetites according to normal cues of satiety, restrained eaters counterregulate their appetites. Thus, for restrained eaters, normal physiological cues of satiety are blocked by the effects of their excessive food deprivation during dieting (Herman & Polivy, 1980).

In another series of studies Polivy (1976) investigated the mechanism by which the counterregulation of appetite occurs in restrained eaters. The restrained eaters were divided into two groups both in which participants were given preloads equal in quantity and caloric content. However, whereas participants in one group were informed that the food was calorie-rich, participants in the other group were informed that the food was calorie-poor. Polivy (1976) found that the group believing the food to be calorie-rich consumed *more* food than the group believing the food to be calorie-poor. From this Polivy (1976) concluded that restrained eaters who believe themselves to be consuming calorie-rich food, believe their diets to have failed, and develop negative cognitions in association with this such as, "I blew it". From this failure perspective restrained eaters believe there is no point in continued food restraint, and thus gorge themselves (Polivy, 1976), an event referred to as "disinhibited eating". In a later study Heatherton Polivy and Herman (1990) found that, more so than the calorie content of the preload, the perception that the diet had failed contributed to the disinhibition of eating following a preload.

Other research by Polivy and Herman (1976) revealed that disinhibited eating in restrained eaters is set off by alcohol consumption, lowered mood, or elevated emotional stress. These factors have also been associated with

bulimia (e.g., Root et al., 1986). Such disinhibited eating was found to be lessened greatly when another person was present (Polivy & Herman, 1979). This finding of preferring privacy for excessive eating is similar to that reported as characteristic of women with bulimia (Larson & Johnson, 1985).

More recently, self-esteem was another factor found to be associated with disinhibited eating. In investigating the mediating effects of self-esteem on the disinhibition of eating Polivy, Heatherton and Herman (1988) found that whereas self-esteem in unrestrained subjects was unrelated to eating behaviour following a preload, self-esteem was related to eating behaviour in restrained subjects. Restrained subjects with low self-esteem demonstrated more disinhibited eating following a preload than restrained subjects higher in self-esteem. Consequently, Polivy et al. (1988) argued that "people with low self-esteem who undertake dieting - often, ironically, in an attempt to raise their self-esteem - may find themselves worse off than if they have not attempted to improve themselves" (p. 356).

According to Polivy and Herman (1985) the findings of their experiments suggest that dieting is a causal factor in bingeing rather than excessive eating being a causal factor in dieting. Thus, "the disease is dieting". This theory clearly offers a useful explanation of why women suffering from bulimia nervosa swing from overeating to undereating behaviours. It may also account for why so many women suffering from anorexia nervosa, in severely restricting their food intake, eventually develop bulimia nervosa.\*

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\* As outlined in Chapter One, 30% to 50% of women with anorexia nervosa develop bulimia. (Johnson & Lewis, 1984).



### 3.4.2 Cognitive and Psychological Factors

Regardless of the important findings associating eating disorders with dieting, complex disorders such as anorexia or bulimia nervosa are not likely to be caused by being overweight and/or dieting alone. The emaciated body shape of women with anorexia nervosa goes well below the body size considered desirable as a societal standard for shape, suggesting profound disturbances of self-perception and evaluation. Additional cognitive and psychological factors associated with increased risk for anorexia and bulimia nervosa are discussed below.

#### Distorted Body Image and Body Dissatisfaction

Body image is defined as "the inner mental image of one's body and the sum of one's emotional attitudes towards that image" (Powers, Schulman, Gleghorn & Prange, 1987, p. 1456). Some researchers have claimed that women with anorexia and/or bulimia have distorted body images, especially in that they overestimate their size (Garner, 1981; Garner et al., 1976; Pierloot & Houben, 1978; Russell et al., 1975; White & Boskind-White, 1981; Williamson, Davis, Goreczny, Blouin, 1989). It has been argued that, for women with anorexia nervosa, the more serious the body image distortions, the poorer the prognosis tended to be for recovery (Button et al., 1977; Garfinkel, 1981; Garfinkel, Moldofsky & Garner, 1977).

Various methods have been used to investigate perceptions of body size in women with eating disorders, with varying results. Some studies found that women suffering from anorexia nervosa and/or bulimia were significantly less accurate than healthy women in estimating their actual body sizes (rating themselves as wider than they actually were), using a horizontal light beam (e.g., Norris, 1984; Ruff & Barrios, 1986), image marking techniques (e.g., Whitehouse, Freeman, & Annandale, 1986), and, silhouette cards (e.g., Williamson et al., 1989).

Body image distortion has also been found among healthy women (e.g., Cash & Green, 1986; Garner, Garfinkel & Bonato, 1987). Several studies of body image distortion have been unable to distinguish perceptions of women with anorexia and/or bulimia from those of healthy controls. For example, Mizes (1992), using the Body Image Detection Device, for women with anorexia nervosa, with bulimia nervosa and controls, was unable to differentiate between groups according to body image distortion. Counts and Adams (1985), using a silhouette card sorting method found that although healthy controls were more accurate, there were no significant differences in estimates of actual size between groups. Using a silhouette scale in their large population based female twin study, Walters and Kendler (1995) found no significant association between anorexia nervosa and body image distortion, but claimed that this may be because few of the women with a history of anorexia nervosa were actively symptomatic at the time of body image assessment.

Numerous other explanations have been offered for the inconsistent findings of body-image distortion studies, but the conclusions from these are not clear-cut. Certainly the inconsistencies cannot merely be accounted for as a consequence of the use of different measurement of techniques by different researchers, as similar techniques have had inconsistent findings. For example, Meerman (1983), using video images to compare women with anorexia nervosa with healthy controls, found that both groups underestimated body size, the controls more so. However, in a similar video image study, Whitehouse et al (1988) found no overall difference between women with anorexia nervosa and normal controls.

In addition to claims regarding body image distortion, it has been claimed that women with anorexia and/or bulimia nervosa have more negative attitudes towards their bodies than healthy women (e.g., Garner, 1981;

Garner et al., 1992; Gleaves & Eberenz, 1993; Gleghorn, Penes, Powers & Schulman, 1987). A higher prevalence of body dissatisfaction has been found in women than in men (as outlined above, see *Being Female*).

Numerous researchers, using the EDI, or EDI-2, have consistently found a significantly higher level of body dissatisfaction\* in women with eating disorders than in healthy women (e.g., Garner et al., 1992; Gleaves & Eberenz, 1993; Schlesier-Carter et al., 1989). In Schlesier-Carter's (1989) study (outlined above) these significant differences on the EDI Body Dissatisfaction subscale held when depression was controlled statistically.

On the basis of research to date, although it is widely accepted that women with anorexia and/or bulimia nervosa have higher levels of body dissatisfaction than healthy women, there is insufficient evidence that perceptual distortion of body size differentiates women with eating disorders from healthy women.

### Poor Self-Esteem

"Self-esteem is the way one feels about oneself, including the degree to which one possesses self-respect and self-acceptance. Self-esteem is the sense of personal worth and competence that persons associate with their self-concepts" (Corsini, 1987, p. 1016).

Poor self-esteem has been associated with numerous psychopathologies. A relationship between poor self-esteem and restrained eating has already been noted (see *Overweight and Dieting*). Some researchers have reported a relationship between self-esteem and body image satisfaction (e.g., Franzoi & Shields, 1984; Kendler et al., 1991; Lerner, Karabenick & Stuart, 1973; Pomerantz, 1979). While most such studies found that for females, but not

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\* Body dissatisfaction is a subscale of the EDI-2; see Method Chapter below.

males, dissatisfaction with one's body image related to very low self-esteem (e.g., Lerner et al., 1973; Pomerantz, 1979), some studies had reversed findings (e.g., Franzoi & Shields, 1984). Franzoi and Shields (1984) argued that these inconsistent findings may be because males' perceptions of body image satisfaction differ from that of females. Several studies have found that whereas men primarily judge their bodies from a functional and active perspective, women judge their bodies more so from an aesthetic perspective (e.g., Lerner, Orlos & Knapp, 1976). From this it would seem that the Western culture slim female ideal is associated with women's self-perceptions of their bodies. Consistent with this, Bandura (1986) argued that perceptions of self-worth are affected by cultural judgements.

Bloom (1990), in claiming the personal well-being of adolescents to be linked to their self-esteem, cited research suggesting an association between high self-esteem and a sense of satisfaction and control over one's life. On the other hand, low self-esteem was found to be associated with feelings of lack of satisfaction and control over one's life.

Numerous researchers have claimed that low self-esteem is a major factor associated with anorexia and bulimia nervosa. This has been argued from a clinical observational perspective (e.g., Bruch, 1973; Garfinkel & Garner, 1982) and from the findings of empirical research (e.g., Friedlander & Siegel, 1990; Katzman & Wolchik, 1984; Kendler et al., 1991; Silverstone, 1990; Walters & Kendler, 1995). As Kendler and associates' (1991, 1995) data were gathered from a large population-based sample their findings add considerable support to the argument that low self-esteem is associated with anorexia and/or bulimia nervosa. Silverstone (1990), using self-esteem and depression measures, found low self-esteem in women with anorexia and/or bulimia nervosa even in the absence of depression.

### Feelings of Inadequacy/Ineffectiveness

Associated with poor self-esteem is the feeling of failure, and associated with failure experiences are feelings of failing to meet expectations of self and others. Slade (1982), in his model of the development of anorexia nervosa, argued that an association exists between perfectionism, failure experiences and eating disorders. Kagan and Squires (1984), in their study of high school students, also associated failure experiences and feelings of inadequacy with eating disorders. A strong association was found between all disordered eating habits, even highly restricted dieting, and feelings of inadequacy.

Inadequacy in coping skills has been suggested as a risk factor for bulimia in that it reduces one's ability to deal with stress. Bingeing is seen as a concomitant of this lack of coping (Hawkins & Clement, 1984; Katzman & Wolchik, 1984). In support of this argument, women who experience high levels of stress have been found to be at increased risk for binge eating (e.g., Abraham & Beumont, 1982; Strober, 1984).

Women with bulimia have been claimed to experience high conflict avoidance and considerable inadequacy in identifying and asserting their needs (Arenson, 1984; Boskind-Lodahl, 1976; Boskind-White & White, 1983). In addressing this problem, Striegel-Moore et al. (1986) argued that if a woman's sense of her own needs and opinions is superseded by her concern for other's needs and opinions, she is at risk for psychopathology, including eating disorders.

As well as being described as inadequate, women with anorexia and/or bulimia nervosa have been described as ineffective (e.g., Bruch, 1978; Garner et al., 1992; Gleaves & Eberenz, 1993; Williamson, Gleaves, Watkins & Schlundt, 1993). From a clinical observational perspective, Bruch (1978) described individuals with anorexia nervosa as appearing competent

outwardly while suffering a paralyzing underlying sense of ineffectiveness that pervaded their thinking and behaviours.

Numerous claims of ineffectiveness in women with anorexia and/or bulimia nervosa have been based on research using the EDI, or EDI-2.<sup>\*</sup> For example, Garner et al. (1992) and Gleaves and Eberenz (1993) found women with anorexia nervosa had mean scores elevated from the norm on the EDI Ineffectiveness subscale. On the EDI-2 Ineffectiveness subscale, Garner (1991) reported mean scores of women with bulimia nervosa as significantly higher than scores of healthy controls. Similarly, Williamson et al. (1993) found significantly higher EDI Ineffectiveness for women with normal weight bulimia nervosa compared to non-eating disordered women.

### Depression

Much of the cognitive-behavioural theorizing associated with depression has addressed the capacity of harsh self-evaluation to contribute to anxiety and despondency (e.g., Asarnow & Bates, 1988; Beck, Laude & Bohnert, 1974). Environmental influences have also been associated with depression. According to Hops (1992) "within a social interactional perspective, depression is conceptualised as a class of behaviours that is under the control of the social environment and at the same time operates as a context for other social agents" (p. 126). From this perspective, depression is conceptualised as a behavioural response shaped by the social environment, and, in turn, structuring the social environment of the depressed person.

Studies using the self-report Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock & Erbaugh, 1961)<sup>\*\*</sup> have found the symptoms of anorexia nervosa and major depression to overlap considerably (e.g., Steiner, 1990;

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<sup>\*</sup> See Method Chapter below for a description of the EDI-2 Ineffectiveness subscale.

<sup>\*\*</sup> See Method Chapter below for a description of the BDI.

Strauss & Ryan, 1988; Walters & Kendler, 1995). Also using the BDI, comorbidity has been reported between symptoms of bulimia nervosa and major depression (e.g., Brouwers, 1988; Mizes, 1988; Steiner, 1990; Strauss & Ryan, 1988).

High rates of major depression in women with eating disorders have also been diagnosed by the interviewing clinicians. For example, a New Zealand study of a clinical sample of women with bulimia nervosa, grouped according to whether or not they were alcohol dependent, found similar rates of major depression on the Hamilton Depression Rating Scale (HDRS; Hamilton, 1960) in both groups of women (53% and 56%) (Bulik, Sullivan, Joyce & Carter, submitted).

In a study of patients with bulimia, Pope and Hudson (1984) found that approximately 80% had suffered from a major affective disorder (bipolar disorder or major depression) during their lifetimes. This is significantly greater than the incidence in the general population. Research indicates that approximately 12% of the adult population suffers an episode of depression requiring treatment at some stage in their life (Beck, Rush, Shaw & Emery, 1979). Wells et al.'s (1989) Christchurch, New Zealand epidemiological study found lifetime prevalence rates of major depression of 12.6% overall, being 8.8% for males, and 16.3% for females, and Wells et al. (1989) claimed that these prevalence rates were higher than those found in prevalence studies outside New Zealand.

Some researchers have argued that bulimia may be an alternate form of affective disorder (e.g., Hudson et al., 1982; Walsh, Stewart, Wright, Harrison, Roose & Glassman, 1982).<sup>\*</sup> However, other researchers have

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<sup>\*</sup> Some of the evidence for this is the high rate of affective disorders found in first-degree relatives of women with bulimia (outlined in the Family Factors section of this study).

disputed this notion (e.g., Hinz & Williamson, 1987; Kendler et al., 1991; Root et al., 1986; Schlesier-Carter, Hamilton, O'Neil, Lydiard & Malcolm, 1989). In a well controlled study of depression and bulimia, with depression as a covariate, Schlesier-Carter et al. (1989) found significant differences between women with bulimia and controls on several measures of cognitive and behavioural symptoms of bulimia, including four of the eight EDI scales.\* Consequently, Schlesier-Carter et al. (1989) argued that "although depression can be frequently diagnosed in a bulimic sample, certain maladaptive cognitions and behaviors reflect a distinct disorder (bulimia) and are not simply the expression of an affective disorder" (p. 324).

Several researchers have argued that depression increases in women with bulimia during and following the binge eating and purging episodes (e.g., Johnson & Larson, 1982; Russell, 1979). Striegel-Moore et al. (1986) suggested that for some women with bulimia, the binge/purge cycle may serve to self-punish, whereas, in others bingeing may serve as a form of self-nurturance, and thus as an antidote to depression. Further, an association may exist between the onset of bulimia and depression in that if weight conscious women become depressed this may weaken their eating restraint and lead to bingeing (Polivy & Herman, 1976; Striegel-Moore et al., 1986).\*\*

Body image satisfaction has been associated with depression in women with eating disorders. For example, Laessle, Kittl, Fichter and Pirke (1988), in a study of patients with anorexia and bulimia nervosa, found significant positive correlations between depression and cognitive schemata. Negative body attitudes were found to be most closely associated with depression.

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\* 1. Significant differences were found on the EDI scales of Drive for Thinness, Bulimia, Body Dissatisfaction and Interoceptive Awareness.  
2. The EDI-2 is used in this study, with BDI as a covariate.

\*\* The association between depression and eating restraint has been noted above; see Overweight and Dieting.



Studies of individuals suffering from diabetes have also found higher levels of depression than for healthy individuals, in both adults (e.g., Lustman, Clouse & Carney, 1988; Sanders, Mills, Martin & Del Horne, 1975) and in adolescents (e.g., Sullivan, 1978).<sup>\*</sup> Comparing adolescent girls suffering from diabetes with adolescent girls not suffering from diabetes on measures of self-esteem and depression, Sullivan (1978) found that there were no significant differences between groups on self-esteem scores. However, girls with diabetes showed significantly more depression than girls without diabetes. From the findings of these studies it may seem that women with eating disorders and women with diabetes share similarly elevated depression levels. However, a comparison of BDI mean scores between studies of women with eating disorders and women with diabetes reveals that the depression scores of women with eating disorders are typically considerably more elevated than for women with diabetes.

#### Immature/Distrusting of Others/Highly Dependent

Friedlander and Siegel (1990) described women with bulimia nervosa as immature, distrusting of others, and having dependency conflicts.<sup>\*\*</sup> Maturity fears and interpersonal distrust in women with anorexia and/or bulimia nervosa have been found by numerous researchers using the EDI, or EDI-2 (e.g., Garner et al., 1992; Gleaves & Eberenz, 1993; Williamson et al., 1993).

Numerous researchers have claimed women with anorexia and/or bulimia nervosa to be characteristically highly dependent (e.g., Brewerton, Hand & Bishop, 1993; Bruch, 1973; Bulik, Sullivan, Weltzin, McKee & Kaye, 1995;

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<sup>\*</sup> Women with diabetes are a control group in this study; see Method Chapter below.

<sup>\*\*</sup> 1. Maturity Fears and Interpersonal Distrust are subscales of the EDI-2; see Method Chapter below.

2. Dependence is measured in this study as a temperament subscale of the Reward Dependence dimension of the TPQ (Cloninger, 1986); see Method Chapter below.

Friedlander & Siegel, 1990; Selvini-Palazzoli & Viaro, 1988). Such research has a wide methodological base. For example, clinical observational studies have reported dependency problems in women with anorexia/and or bulimia nervosa (e.g., Minuchin et al., 1978; Root et al., 1986; Selvini-Palazzoli & Viaro, 1988).<sup>\*</sup> Studies using structured questionnaires have also found high dependency in women with anorexia/and or bulimia nervosa, for example, Friedlander and Siegel (1990) using the Psychological Separation Inventory (PSI; Hoffman, 1984), and Brewerton et al. (1993) and Bulik et al. (1995) using the Tridimensional Personality Questionnaire (TPQ; Cloninger, 1986).<sup>\*\*</sup>

The high dependence found in women with anorexia and/or bulimia nervosa using the TPQ was assessed as a subscale of the TPQ Reward Dependence (RD) dimension. Research by Bulik et al. (1995), comparing female sub-groups of women with eating disorders on the TPQ, found that those with restricting anorexia nervosa tended more towards the RD dimension than women with bulimia nervosa with no history of anorexia nervosa or women with anorexia nervosa, bulimic subtype.<sup>\*\*\*</sup>

On the other hand, Brewerton et al. (1993), also using the now superseded four subscale RD dimension of the TPQ, found that RD scores were *not* significantly different between eating disorder sub-groups (i.e., bulimia nervosa, anorexia nervosa, and comorbid bulimia and anorexia nervosa) and a female control group. However, significant differences were found between the four groups on some RD subscales. In comparison to the women controls, women in all three eating disorder groups scored

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<sup>\*</sup> These observations are outlined in detail in the Family Studies Chapter below.

<sup>\*\*</sup> For a full description of the TPQ see Method Chapter below.

<sup>\*\*\*</sup> Bulik et al. (1995) reported results for the earlier TPQ Reward Dependence Dimension consisting of four subscales. Reward Dependence now consists of three subscales as the former Persistence subscale is now an independent TPQ dimension; see Method Chapter below.

significantly lower on the RD Attachment subscale. Also, in comparison to controls, women with anorexia nervosa scored significantly higher on the RD Persistence subscale, and women with bulimia nervosa scored significantly higher on the RD Dependence subscale. Bulik et al. (1995) also found women with normal weight bulimia nervosa tended more toward the Dependence subscale than other groups, although not significantly.

The contradictory findings of Bulik et al. (1995) and Brewerton et al. (1993) as to which sub-groups of women with eating disorders are more likely to be reward-dependent (as measured by the TPQ) are difficult to explain. It may be that the TPQ RD Dimension is not a reliable measure, or it may be due to methodological differences between the studies. In Brewerton et al.'s (1993) study the female control group, cited from Cloninger et al. (1991), was of significantly older age than the female eating disorder group. Brewerton et al. (1993) acknowledged that this was problematic because all TPQ dimensions correlate with age (Cloninger, 1991). As Brewerton et al. (1993) were unable to use age as a dependent variable in an analysis of covariance (ANCOVA), their findings should be interpreted with caution.

#### Poor Social Skills/Social Insecurity

In association with immaturity, women with eating disorders have been reported to have poor social skills (e.g., Crisp & Bhat, 1982; Grissett & Norvell, 1992; Jones, Halford & Dooley, 1993; Lacey, 1982). On the basis of clinical observations, Lacey (1982) argued that patients suffering from bulimia were socially deficient, associating this with academic achievement taking a precedence over their social life. Clinicians have made similar claims regarding women suffering from anorexia nervosa (e.g., Bruch, 1978).

Social deficits in women with eating disorders have also been found in empirical studies. For example, Crisp & Bhat, (1982) found that in

comparison to healthy women, women with anorexia nervosa were highly introverted and did not possess any of the personal and social adaptive behaviours typical of their peers.

In a recent study of women recovered from anorexia nervosa, Jones et al. (1993) found that, although two thirds of the women had improved to a clinically significant degree, the majority scored higher than normal on several measures including social maladjustment. Structured clinical interviews demonstrated that, for the women who had not improved, poor social functioning was one of several features of personal impairment.

A study in which the primary focus was to investigate specific aspects of the social networks and interpersonal relationships of women with bulimia nervosa was carried out by Grissett and Norvell (1992). On self-report measures of perceived social support, social skills and the quality of relationships, both friends and families were perceived as significantly less supportive by women suffering from bulimia nervosa than by healthy controls. The women with bulimia nervosa were also found to be significantly less socially competent and participated in significantly more negative and conflictual interaction than the healthy women. Further, the women with bulimia nervosa were rated by observers (unaware of their group status) as less socially competent than the healthy controls.

Social deficits in women with eating disorders have also been assessed using the EDI-2. Garner et al. (1991) found that women with anorexia and/or bulimia nervosa scored significantly higher than healthy women on the Social Insecurity subscale of the EDI-2.\* As Social Insecurity is one of three recent additions to the EDI-2, Garner et al.'s (1991) norms appear to provide

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\* For a description of the Social Insecurity subscale of the EDI-2 see Method Chapter below.

the only published means and standard deviations for healthy women.\*

The social difficulties found in women with anorexia and/or bulimia nervosa may be associated with poor interoceptive awareness, that is, the inability to accurately recognize one's true feelings and emotions. Such a deficit is likely to cause difficulty with interpersonal relationships. Researchers using the EDI, or EDI-2, found women with anorexia nervosa had scores elevated from the norm on the Interoceptive Awareness subscale\*\* (e.g., Garner et al., 1992; Gleaves & Eberenz, 1993). Women with bulimia nervosa have also been reported to have significantly higher EDI, or EDI-2, Interoceptive Awareness mean scores compared to non-eating disordered women (e.g., Garner, 1991; Williamson et al., 1993).

#### Poor Impulse Regulation/Novelty Seeking

Women with anorexia and/or bulimia nervosa have been found to have poor impulse regulation (e.g., Casper, Eckert, Halmi, Goldberg & Davis, 1980; Garner et al., 1991). Garner et al. (1991) found that women with anorexia nervosa and women with bulimia nervosa scored significantly higher on the EDI-2 Impulse Regulation subscale\*\*\* than healthy women controls. Using a variety of assessment measures other researchers have found that poor impulse regulation has tended to predict a poor prognosis in women with eating disorders (e.g., Casper et al., 1980).

Poor impulse regulation in women with bulimia nervosa has been found to be reflected in a self-defeating, impulsive behaviour style. For example,

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\* The present study will compare EDI-2 responses of women with eating disorders and healthy women.

\*\* For a description of the Interoceptive Awareness subscale of the EDI-2 see Method Chapter below.

\*\*\* For a description of the Impulse Regulation subscale of the EDI-2 see Method Chapter below.

women with bulimia nervosa have been found to have higher rates of alcohol and drug abuse than healthy women (Dykens & Gerrard, 1986; Hatsukami, Owen, Pyle & Mitchell, 1982; Kendler et al., 1991; Leon et al., 1985; Root et al., 1986; Schmidt & Telch, 1990; Walsh, Roose, Glassman, Gladis & Sadik, 1985). Root et al. (1986) claimed substance abuse in women with bulimia to be one of several varying indicators of boundary problems.\*

Poor impulse regulation in women with bulimia nervosa has also been reflected in higher rates of shoplifting (e.g., Root et al., 1986; Schmidt & Telch, 1990; Weiss & Ebert, 1983), and a higher prevalence of promiscuity (Dykens & Gerrard, 1986; Schmidt & Telch, 1990), than found in the general population. High rates of suicide and/or suicidal gestures have also been reported in women with anorexia and/or bulimia nervosa (e.g., Johnson, Stuckey, Lewis & Schwartz, 1982; Schmidt & Telch, 1990; Sullivan, 1995). This may be a further reflection of poor impulse regulation in women with bulimia nervosa.

Characteristics associated with impulsiveness appear to be more specific to women with bulimia nervosa with comorbid alcohol dependence than women with bulimia nervosa alone (Bulik et al., submitted). Bulik et al. (submitted) compared women with bulimia nervosa and comorbid alcohol dependence with women with bulimia nervosa alone on several measures. It was found that the women with bulimia nervosa and comorbid alcohol dependence scored significantly higher than the women with bulimia nervosa alone on the EDI-2 Impulse Regulation subscale, the TPQ Novelty Seeking (NS) Dimension,\*\* and all three scales of the Barratt Impulsivity Scale (Barratt, 1983).

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\* Boundary, as used here, refers to the emotional and/or physical proximity to others. This is discussed in detail in the Family Studies Chapter below.

\*\* See Method Chapter below for a description of the TPQ NS Dimension.

The high TPQ NS found by Bulik et al. (submitted) in women with bulimia nervosa and comorbid alcohol dependence, has been reported in studies comparing women with bulimia nervosa with other groups of women. Research administering the TPQ to women with bulimia nervosa found high NS (Waller, Petty, Hardy, Gullion, Murdock, & Rush, 1991: cited in Brewerton, Hand & Bishop, 1993). Similarly, research by Bulik et al. (1995), comparing female sub-groups of women with eating disorders on the TPQ, found that those women with bulimia nervosa with no history of anorexia nervosa tended more towards the NS dimension than women with restricting anorexia or with anorexia nervosa, bulimic subtype.

Brewerton et al. (1993) administered the TPQ to three groups of female patients with eating disorders: women with anorexia nervosa, with bulimia nervosa, and with comorbid bulimia and anorexia nervosa. In comparing these groups with Cloninger et al.'s (1991) normative controls, Brewerton et al. (1993) found that women with normal weight bulimia nervosa scored significantly higher on the NS dimension than the women with anorexia nervosa and a female control group. This finding is supported by that of Bulik et al. (1995). However, unlike Bulik et al. (1995) Brewerton et al. (1993) found women with comorbid bulimia and anorexia nervosa also scored significantly higher on the NS dimension than women with anorexia nervosa. This finding should be interpreted with caution as the number of women in Brewerton et al.'s (1993) study with comorbid bulimia and anorexia nervosa ( $N = 10$ ) was likely to be too small for reliable statistical analysis.\*

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\* 1. Other groups in Brewerton et al.'s (1993) study had sufficient numbers for reliable statistical analysis ( $N=27$ ,  $N=110$ ,  $N=350$ ).

2. Brewerton et al.'s (1993) study has also been criticized (see TPQ Reward Dependence, outlined above) for using controls (cited from Cloninger et al., 1991) of significantly older age than the eating disorder groups. All TPQ dimensions, especially NS, correlate with age (Cloninger, 1991), yet Brewerton et al. (1993) were unable to use age as a dependent variable in an analysis of covariance (ANCOVA).

### Anxiety Disorders

Numerous researchers have reported an association between anxiety disorders and anorexia and/or bulimia nervosa (e.g., Bulik, Beidel, Duchmann, Weltzin & Kaye, 1991; Hudson, Pope, Jonas & Yurgelun-Todd, 1983b; Kendler et al., 1991; Laessle, Kittl, Fichter, Wittchen & Pirke, 1987; Mitchell, Hatsukami, Eckert & Pyle, 1985; Walters & Kendler, 1995). Comorbidity studies of anxiety and eating disorders have reported widely varying findings, according to sampling methods and instruments used (see Bulik, 1995, for a review).

Schwalberg, Barlow, Alger and Howard (1992) compared women suffering from bulimia nervosa, obese binge-eating, social phobia and panic disorders on a structured interview schedule of anxiety. It was found that 80% of participants with bulimia nervosa suffered from a history of one or more anxiety disorders, especially generalized anxiety disorder and social phobia.\* This study also compared the dates of onset of bulimia nervosa and anxiety disorders in those with a comorbid diagnosis. For 59% of such women the onset of the anxiety disorder predated the onset of bulimia nervosa. Although Schwalberg et al. (1992) concluded from this that anxiety may be an aetiological factor for bulimia nervosa, they cautioned that because the sample size was small statistical power was low.

A recent New Zealand study of 114 women participating in a treatment programme for bulimia nervosa (Bulik, Sullivan, Carter & Joyce, submitted: cited in Bulik, 1995) assessed whether the onset of anxiety disorders tends to

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\* 1. "Generalized Anxiety Disorder is characterized by at least 6 months of persistent and excessive anxiety and worry" (APA, 1994).

2. "Social anxiety disorder [Social Phobia] is characterized by clinically significant anxiety provoked by exposure to certain types of social or performance situations, often leading to avoidance behavior" (APA, 1994).

3. Social anxiety seems to be conceptually similar to Socially Prescribed Perfectionism, a dimension of the MPS (Hewitt and Flett, 1991) outlined at length in the Perfectionism Chapter below.



predate the onset of bulimia nervosa. Each participant was reviewed for a diagnosis of childhood anxiety disorders, as well as for adult onset anxiety disorders. It was found that 64% of women with bulimia nervosa suffered from a history of an anxiety disorder with 92% of such women endorsing the onset of the anxiety disorder as having been prior to the onset of bulimia nervosa.

In another New Zealand study, using a similar methodology, Sullivan, Bulik & Fear (in progress: cited in Bulik, 1995) identified childhood anxiety disorders in the majority of a group of women with a history of anorexia nervosa. In every case the onset of the anxiety disorder preceded the onset of the anorexia nervosa. In comparing the findings of this study with those of Bulik et al. (submitted), women with anorexia nervosa had higher rates of childhood anxiety disorders than women with bulimia nervosa - both groups having higher rates than controls. Consequently, Sullivan et al. suggested that anxiety may be a pathway to anorexia nervosa.

Other recent empirical investigations have also identified anxiety disorders as preceding the onset of anorexia nervosa (Braun, Sunday & Halmi, 1994; Deep, Nagy, Weltzin, Rao & Kaye, 1995). In Deep et al.'s (1995) study of women with a history of anorexia nervosa, 75% (14 women) endorsed a history of an anxiety disorder. Eleven of these women claimed the onset of the anxiety disorder predated the onset of the anorexia nervosa. However, the strength of these findings is limited by the small sample size.

Although the studies outlined above may all be biased in that they examined rates of anxiety in clinically referred women, epidemiological studies have identified significant comorbidity between anxiety disorders and anorexia and/or bulimia. The most prominent of these studies was the large population-based female twin study of Kendler and associates: Kendler

et al. (1991), pertaining to bulimia nervosa, and Walters & Kendler (1995), pertaining to anorexia nervosa. These studies provide strong evidence of an association between anxiety disorders and the eating disorders of anorexia and bulimia nervosa.

Several researchers have specified social anxiety as prominent in women with anorexia and/or bulimia nervosa (e.g., Bulik et al., 1991; Schwalberg, Barlow, Alger & Howard, 1992; Striegel-Moore, Silberstein & Rodin, 1993). Bulik et al. (1991), in comparing women with anorexia nervosa, bulimia nervosa, social phobia, and controls on a social phobia and anxiety questionnaire, found that the women with eating disorders scored as highly as the women with social phobia on social fears. Such fears related not only to food and appearance, but also to more generalized social settings. Striegel-Moore et al.'s (1993) study compared women with bulimia nervosa, women who scored highly on the Eating Attitudes Test (EAT; Garner, Olmsted, Bohr & Garfinkel, 1982), and controls on several measures, including social anxiety. Both the women with bulimia nervosa and high scores on the EAT scored higher than the controls on social anxiety.

Some studies have revealed obsessive-compulsive symptoms in women with anorexia nervosa.\* As the behaviour of individuals suffering from anorexia nervosa is typified by an obsessional preoccupation with food, weight and exercise, this led early researchers to suggest anorexia nervosa may be a form of obsessive-compulsive disorder (OCD) (e.g., Palmer & Jones, 1939). More recently, Rothenberg (1986) echoed such claims. However, other findings have been less consistent, and appear to vary as a function of the instruments used to measure OCD (e.g., Bulik, Beidel, Duchmann, Kaye

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\* "Obsessive-Compulsive Disorder is characterized by obsessions (which cause marked anxiety or distress) and/or by compulsions (which serve to neutralize anxiety)" (APA, 1994).

& Weltzin, 1992; Fahy, 1991; Kaye, Weltzin, Hsu, Bulik, McConaha & Sobkiewicz, 1992).

The presence of OCD symptoms in women with bulimia induced Rosen, Leitenberg and colleagues to develop the "Anxiety Reduction Model", in which vomiting is an escape-avoidance behaviour (e.g., Rosen & Leitenberg, 1985). According to this model, vomiting in individuals suffering from bulimia serves to reduce the anxiety that bingeing causes about weight gain just as compulsive rituals do for individuals suffering from OCD. In reducing the fear of weight gain, vomiting is considered to negatively reinforce the bingeing. Thus escape from the negative feelings associated with bingeing can only be achieved through vomiting.

Several researchers have criticized the "Anxiety Reduction Model" (e.g., Carter & Bulik, 1994; Schwalberg, Barlow, Alger & Howard, 1992). Carter and Bulik (1994) argued that the model does not explain the pleasurable or stress reducing (positively reinforcing) aspects of bingeing. According to Carter & Bulik (1994), if the model is correct then treatment of binge-purging should be directed at preventing purging, rather than bingeing. Such treatment, supervised by a therapist, involves encouragement to binge until a strong urge to vomit occurs, with the instruction to refrain from vomiting (Leitenberg, Rosen, Gross, Nudelman & Vara, 1988). Rosen, Leitenberg, Gross and Willmuth (1985) claimed that if a person with bulimia believes s/he is not allowed to vomit, s/he will eat less than a normal quantity of 'forbidden' food, thus avoiding excessive anxiety. The assumption is that eating induces an urge to purge, yet some clinicians have observed that, alternatively, eating may induce an urge to binge, or an urge to restrict (e.g., Carter & Bulik, 1994). Thus Carter and Bulik (1994) disputed the notion that vomiting is central to the maintenance of bingeing. Indeed, Schwalberg et al. (1992) found a similar rate of anxiety in obese women who did not purge

as in women with bulimia nervosa, thus undermining the significance of purging in the anxiety reduction model.

In spite of the high rates of social anxiety and OCD found in women with anorexia and/or bulimia nervosa, Bulik (1995) pointed out that no study of anxiety in women with anorexia or bulimia nervosa has measured social anxiety or obsessionality prior to the onset of the disorder. Thus these forms of anxiety cannot yet be clearly identified as risk factors for eating disorders.

### Perfectionistic Tendencies/High Need for Approval

Associated with obsessive-compulsive behaviour is perfectionism. Perfectionistic tendencies have been identified by numerous clinical and empirical researchers as a risk factor for eating disorders (e.g., Bruch, 1973; Friedlander & Siegel, 1990; Slade & Dewey, 1986). As perfectionist tendencies and high need for approval in women with anorexia and/or bulimia nervosa, and in their families, is a major focus of this study, perfectionist tendencies and high need for approval are outlined at length in the Perfectionism Chapter below.

### Harm Avoidance

Associated with perfectionist tendencies is harm avoidance. The MPS subscale of Doubts about Actions (see Perfectionism Chapter below) seems to share conceptual similarities with the TPQ Harm Avoidance subscales of Anticipatory Worry and Fear of Uncertainty.

Researchers have found high harm avoidance in women with anorexia and/or bulimia nervosa. Although not referred to as such, high harm avoidance is implicit in clinical observational studies reporting overprotection in families of women with anorexia and/or bulimia nervosa

(e.g., Minuchin et al., 1978; Root et al., 1986)\* as harm avoidance is arguably the dominant response style in overprotective families.

Harm avoidance in women with anorexia and/or bulimia nervosa has been more directly assessed in a few empirical studies using the TPQ\*\* (Brewerton et al., 1993; Bulik et al., 1995; Waller et al., 1991: cited in Brewerton et al., 1993). Waller et al. (1991) reported high TPQ Harm Avoidance (HA) in women with bulimia nervosa. Bulik et al. (1995), comparing female eating disorder sub-groups responses on the TPQ, found that women with anorexia nervosa, bulimic subtype tended more towards the HA dimension than women with bulimia nervosa with no history of anorexia nervosa and women with restricting anorexia nervosa, restricting subtype.

Brewerton et al. (1993), administering the TPQ to three groups of female patients with eating disorders (with bulimia nervosa, restricting anorexia nervosa, and comorbid bulimia and anorexia nervosa) found significantly higher HA in all three eating disorder groups in comparison to healthy controls. These findings were significant on the subscales of HA1 (Anticipatory Worry) and HA4 (Fatiguability), and almost as robust on the HA3 subscale (Shyness). However, Brewerton et al.'s (1993) findings regarding HA should be interpreted with caution as HA is the one TPQ scale that has been found to change according to depressed state in women with anorexia and/or bulimia nervosa (Svrakic, Przybeck & Cloninger, 1992). Bulik et al. (1995) also found TPQ HA to be highly correlated with depression. Thus high TPQ HA scores could be reflecting the existence of high depression.

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\* See systems theory reinterpreted from a social learning perspective, outlined below.

\*\* See Method Chapter below for a description of TPQ Harm Avoidance.

### 3.5 SUMMARY

Numerous socio-cultural, family and individual factors, which are interrelated and overlapping, have been outlined above as risk factors for anorexia and bulimia nervosa. The main factors are summarized below.

#### 3.5.1 Socio-Cultural Factors

Several typical values and norms of Western society have been identified as predisposing vulnerable individuals to anorexia and/or bulimia nervosa. These particularly include a preoccupation with body shape, dieting, and achievement and self-control.

The preoccupation with a slim ideal body shape, current among Western women, has been fuelled by media pressures. Women have historically based their ideal body image on the aesthetic ideal portrayed by the media, an ideal shape which has decreased considerably over time to an almost unattainable level for many women (e.g., Garfinkel & Garner, 1982; Wolf, 1991).

Associated with the slim female body ideal is the practice of dieting. Dieting behaviour, fuelled by a multi-billion dollar dieting industry, has been a preoccupation of the majority of young Western women at some stage (e.g., Brownell & Rodin, 1994). However, most dieting women fail to achieve their slim body ideal.

Western culture has typically portrayed attainment of a slim female body shape as a symbol of achievement and self-control (e.g., Brownell, 1991). Conversely, obesity has been stigmatized as a symbol of laziness and lack of self-control (e.g., Bordo, 1990). Consequently, many women believe that

attainment of a slim body provides control of one's life, and enhancement of one's self-worth (e.g., Katzman et al., 1986). However, for many women suffering from anorexia nervosa, rather than a slim body being a solution to personal problems (e.g., low self-esteem), such problems tend to be enhanced (e.g., Garner & Garfinkel, 1985).

### 3.5.2 Family Factors

Numerous family factors, interwoven with cultural and individual factors in the aetiology of anorexia and/or bulimia nervosa include demographic and socio-economic variables, major affective disorder, substance abuse, obesity, preoccupation with food and dieting, perfectionist and obsessive tendencies, and sibling rivalry. Family interaction patterns include low parental care/parental overprotection, high conflict, low cohesion, low expressiveness, and situational factors/parent-child bond.

Although demographic variables, such as having older age parents (e.g., Dolan et al., 1990) and high socio-economic status (e.g., Levine & Smolak, 1992) have been implicated in the aetiology of eating disorders, the evidence for these is not conclusive. However, strong evidence has been found of a higher prevalence of major affective disorder in families of women with anorexia and bulimia nervosa than in families of healthy women e.g., Hudson et al., 1982; Rivinus et al., 1984). To a lesser extent than for major affective disorder, higher rates of substance abuse (e.g., Bulik, 1987) and of obesity (e.g., Garfinkel et al., 1980) have been found in families of women with bulimia nervosa than in families of healthy women.

Other factors found to be more prevalent in families (especially mothers) of women with anorexia and/or bulimia nervosa than in families of healthy women are a preoccupation with food and dieting (e.g., Pike & Rodin, 1991).

Consequently it may be that daughters partially learn their eating behaviours from imitating those modelled by their mothers (e.g., Costanzo & Woody, 1985; Pike & Rodin, 1991).

Perfectionist tendencies have also been found to be more prevalent in families of women with anorexia and/or bulimia nervosa than in families of healthy women (e.g., Garner et al., 1983). As perfectionism is the primary focus of this study this is outlined in the Perfectionism Chapter below.

Associated with perfectionist tendencies is sibling rivalry. Although several studies have identified sibling rivalry in the aetiology of anorexia and/or bulimia nervosa (e.g., Sights & Richards, 1984) the evidence for this is not conclusive. It may be that other factors associated with sibling rivalry, such as high personal standards and high parental expectations, are greater risk factors for eating disorders (see Perfectionism Chapter below).

Studies using the PBI have generally (but not consistently) reported lower parental care and higher parental protection for women with anorexia and/or bulimia nervosa than for healthy women (e.g., Calam et al., 1990; Rhodes & Kroger, 1992). These differences did not reach significance in all such studies.

The most consistent findings of studies using the FES for women with anorexia and/or bulimia nervosa is difficulty in interpersonal relationships. Thus families of women with anorexia and/or bulimia nervosa have been found to have higher conflict, lower cohesion, and lower expressiveness (the three FES relationship subscales) than families of healthy women (e.g., Johnson & Flach, 1985; Stern et al., 1989).



Situational factors (e.g., family break-up, parental death, attendance at boarding school) have been claimed as potential triggering factors for anorexia and/or bulimia nervosa in vulnerable children (e.g., Epling & Pierce, 1991). A common thread among such situational factors is that they may weaken the bond between a child and at least one parent. Difficulties in parent-child (especially father-daughter) relationships during adolescence, following 'good' earlier relationships, were found in clinical and controlled empirical studies of females who later developed anorexia and/or bulimia nervosa (e.g., Dolan et al., 1990; Guidano & Liotti, 1983).

### **3.5.3 Individual Factors**

Personal and developmental factors in the aetiology of anorexia and/or bulimia nervosa include a genetic predisposition, being female, adolescence, participation in occupations and activities which promote slimness, overweight and dieting. Cognitive and psychological individual factors include distorted body image, body dissatisfaction, poor self-esteem, feelings of inadequacy/ineffectiveness, depression, immature/distrusting of others/highly dependent, poor social skills/social insecurity, poor impulse regulation/novelty seeking, anxiety disorders, perfectionist tendencies/high need for approval, and harm avoidance.

A genetic predisposition to eating disorders has been argued from studies finding a familial clustering of anorexia nervosa, and less consistently, bulimia nervosa (e.g., Strober et al., 1990). Evidence from twin studies of a genetic predisposition for anorexia and/or bulimia nervosa is, to date, inconclusive (e.g., Kendler et al., 1991; Walters & Kendler, 1995).

Being female, a predisposing factor for anorexia and/or bulimia nervosa, is associated with Western socio-cultural values such as a female slim body

ideal (e.g., Crisp, 1970; Epling & Pierce, 1991). Approximately 95% of individuals with anorexia nervosa, and 90% of individuals with bulimia nervosa, are female (APA, 1987, 1994; Vandereycken & Van den Broucke, 1984).

Adolescence is the highest risk period for the onset of anorexia and/or bulimia (e.g., Crisp et al., 1980; Dolan et al., 1990). Consequently, factors associated with adolescent development, such as biological and psychosocial changes, may be associated with the onset eating disorders (e.g., Attie & Brooks-Gunn, 1992). Typical adolescent challenges in the search for identity, include, forming a new and healthy body image, increasing autonomy, developing intimate relationships, and coping with media and peer pressures (e.g., Attie & Brooks-Gunn, 1992; Gray, 1988).

Increased rates of eating disorders (especially anorexia nervosa) have been found in females who participate in occupations and activities which promote slimness (e.g., Andersen, 1985). Such occupations and activities include being a fashion model, air hostess, jockey, athlete, and/or dancer. Participants are especially vulnerable to eating disorders in professions or activities which include specific weight requirements and highly competitive settings (e.g., wrestling, gymnastics, ballet dancing) (Brownell & Rodin, 1992; Garner & Garfinkel, 1980).

Other factors cited in the aetiology of eating disorders are a history of weight fluctuation and dieting (e.g., Kendler et al., 1991; Polivy & Herman, 1985). Laboratory experiments by Herman, Polivy and associates (e.g., Herman & Polivy, 1979, 1980; Polivy & Herman, 1976) demonstrated that for restrained eaters normal physiological cues of satiety are blocked by the effects of excessive food deprivation. When restrained eaters believe their diet to have failed this may trigger binge eating. Other triggers found to disinhibit

eating in restrained eaters include alcohol consumption, depression, emotional stress and low self-esteem (e.g., Polivy et al., 1988).

Distorted body image and body dissatisfaction may be further risk factors for eating disorders. Studies using the EDI have consistently found significantly higher body dissatisfaction in women with anorexia and/or bulimia nervosa than in healthy women (e.g., Garner et al., 1992). However, there is insufficient evidence that perceptual distortion of body size differentiates women with eating disorders from healthy women.

Another cognitive factor, poor self-esteem, has been associated with numerous psychopathologies including anorexia and bulimia nervosa. Studies of women with eating disorders have linked poor self-esteem with problems such as body image dissatisfaction (e.g., Kendler et al., 1991), restrained eating (e.g., Polivy et al., 1988), lack of personal satisfaction and a feeling of lack of control over one's life (e.g., Bloom, 1990).

Associated with poor self-esteem are feelings of inadequacy and ineffectiveness. Inadequacy in assessing and asserting one's needs, and inadequacy in coping skills (e.g., coping with stress), have been claimed as precipitating factors for bingeing (e.g., Katzman & Wolchik, 1984). Additionally, women with eating disorders have been observed to appear competent outwardly while masking an underlying sense of ineffectiveness (e.g., Bruch, 1978). This ineffectiveness has also been found in empirical studies using the EDI (e.g., Gleaves & Eberenz, 1993; Williamson et al., 1993).

Numerous researchers have reported a comorbidity between depression and anorexia and/or bulimia nervosa (e.g., Steiner, 1990; Walters & Kendler, 1995). Significantly higher rates of depression have been found in individuals with anorexia and/or bulimia nervosa than in the general

population (e.g., Pope & Hudson, 1984). Studies have also found higher rates of depression in individuals with diabetes than in healthy individuals (e.g., Sullivan, 1978). However, in such studies, depression scores were more elevated in individuals with anorexia and/or bulimia nervosa than in individuals with diabetes.

Studies using the EDI have consistently reported maturity fears and interpersonal distrust in women with anorexia and/or bulimia nervosa (e.g., Garner et al., 1992). This may be partially reflected in their poor social skills and social insecurity (e.g., Crisp & Bhat, 1982). Associated with this is high dependency. Numerous studies, from a wide methodological base, found high dependency in women with eating disorders (e.g., Bruch, 1973; Bulik et al., 1995).

Another problem found in women with anorexia and/or bulimia nervosa is poor impulse regulation (e.g., Garner et al., 1991). For women with bulimia nervosa, particularly, this tends to be reflected in self-defeating impulsive behaviours such as substance abuse (e.g., Kendler et al., 1991), shop lifting (e.g., Root et al., 1986) and novelty seeking (e.g., Waller et al., 1991).

Numerous researchers have reported an association between anxiety disorders (especially generalized anxiety, social anxiety and OCD) and anorexia and/or bulimia nervosa (e.g., Bulik et al., 1991; Walters & Kendler, 1995). A recent study, reporting higher rates of anxiety disorders in women with eating disorders than for controls, found the onset of anxiety disorders tended to predate the onset of the eating disorder (Bulik et al., submitted). Thus anxiety disorders may be an aetiological factor for anorexia and bulimia nervosa.

The high rates of anxiety disorders found in women with anorexia and/or bulimia nervosa may reflect perfectionist tendencies and high need for approval, characteristic of such women (see Perfectionism Chapter below). Associated with this is the high harm avoidance, found to typify women with anorexia and/or bulimia nervosa (e.g., Brewerton et al., 1993; Bulik et al., 1995). HA is highly correlated with depression in women with eating disorders (e.g., Bulik et al., 1995). HA (particularly TPQ Anticipatory Worry and Fear of Uncertainty) also seems conceptually similar to the Doubt about Actions subscale of MPS perfectionism (outlined below).

## CHAPTER FOUR

### FAMILY STUDIES OF ANOREXIA AND BULIMIA NERVOSA

both the patient and her family form a tightly knit whole, and we obtain a false picture of the disease if we limit our observations to the patient alone" Laseque (1873; regarding the pathogenic interaction between a woman with anorexia nervosa and her family)

#### 4.1 INTRODUCTION

As the role of the family within the culture has considerable impact on the life of a developing child, numerous researchers have claimed some family-specific interaction patterns to be precipitating factors for eating disorders (e.g., Chadda et al., 1987; Minuchin et al., 1978). Although researchers have examined interaction in families of women with anorexia and bulimia nervosa, it appears that none have done so from a social learning perspective. Rather, a systems approach tends to have been widely used (e.g., Minuchin et al., 1978; Root et al., 1986; Selvini-Palazzoli & Viaro, 1988).

Minuchin et al. (1978) criticized behavioural theories of anorexia nervosa as pertaining only to methods for changing the dysfunctional behaviour rather than relating to the developmental aspects of the disorder. It was argued that, in a large percentage of cases, behavioural therapy for anorexia nervosa fails to achieve sustained improvement after therapy ends.

On the other hand, Finney and Bonner (1992) argued that when behavioural therapy includes the family, similarities exist with the systems approach.

Family behavioural therapy is not necessarily incompatible with family systems approaches. The three-term contingency analysis that emphasizes the temporal relationship between the environmental context, performance of the person, and reinforcing consequences, does not have to be abandoned. Functional analyses, however, need to be expanded to include the entire family system.

Arrington, Sullaway and Christensen (1988) termed this "contextual family assessment" (Finney & Bonner, 1992, p. 16).

Indeed, this is precisely what a social learning approach is able to achieve. Thus, although behavioural perspectives alone are insufficient to explain the development of anorexia and bulimia nervosa, when the operant social learning approach is broadened to include the wider social learning perspective this provides a valuable framework for conceptualization of the development of these disorders. Consequently, the developmental perspectives of Minuchin et al. (1978) and other systems theorists (e.g., Root et al., 1986; Selvini-Palazzoli & Viaro, 1988) are summarized here and discussed from a social learning perspective.

According to Minuchin et al. (1978),

in the systems paradigm, every part of a system is seen as organizing and being organized by other parts. An individual's behavior is simultaneously both caused and causative. A beginning and an end are defined only by arbitrary framing and punctuating. The action of one part is, simultaneously, the interrelationship of other parts of the system (p. 20).

For systems theory the individual and his/her context are an integrated whole. "The psychological unit is not the individual. It is the individual in his [sic] significant social contexts" (Minuchin et al., 1978, p. 21). Similarly, social learning theory emphasizes the importance of considering the individual in his/her social contexts. A fundamental concept of social learning theory is that just as individuals impact on the environment, the environment impacts on individuals in a reciprocal manner. One may note how closely Minuchin et al. (quoted above) echo Bandura's (1977) concept of reciprocal determinism, which postulates that personal functioning occurs as a result of continuous interactions among behaviour, cognition and environmental factors. Indeed, reciprocal determinism is an unstated but vital concept in the 'systems paradigm' outlined by Minuchin et al. (1978).

## 4.2 MINUCHIN AND ASSOCIATES

Minuchin et al.'s (1978) theoretical approach to anorexia nervosa is grounded in clinical practice. From their clinical observations of three 'psychosomatic' groups of children (diagnosed with anorexia, psychosomatic diabetes or asthma), two control groups, and their families, Minuchin et al. (1978) developed a model for psychosomatic disorder from a structural family therapy perspective. In defining 'psychosomatic' Minuchin et al. (1978) claimed that in each case "frequent and severe symptoms that could not be explained on any organic basis were present. The diagnosis of psychosomatic was always made by the pediatrician, who indicated that there were no organic or physiological reasons for the difficulty of medical management" (p. 35).

In addition to investigating the influence of the family environment in the *maintenance* of anorexia nervosa, Minuchin et al. (1978), developed a model of the influence of the family environment in the *development* of anorexia nervosa. In describing family system factors which predispose a person to anorexia nervosa, Minuchin et al. (1978) identified four family characteristics: enmeshment, overprotectiveness, rigidity and lack of conflict resolution. These four family characteristics are outlined below from Minuchin et al.'s (1978) systems perspective. A social learning perspective is then given by way of commentary on Minuchin et al.'s theory. This commentary is intended to provide a perspective different from, but compatible with, the systems perspective of family interaction patterns in the development of anorexia and bulimia nervosa. It is intended to extend the systems contribution of building a strong foundation for the understanding and treatment of anorexia and bulimia nervosa. The Minuchin et al. (1978) perspective is outlined below in the left-side columns and the social learning commentary is given in the right-side columns.



Enmeshment

"Enmeshment refers to an extreme form of proximity and intensity in family interactions" (Minuchin et al., 1978, p. 30). According to Minuchin et al. (1978) families who are enmeshed have weak boundaries between individual relationships, in that there is excessive physical proximity between members, and they participate in excessive observation and intrusive inquiry regarding each other. This occurs in families where parents and children are mutually involved beyond a level normal for the culture and the ages of the children. Family members are encouraged to share an excessive togetherness and invasion of each others thoughts and feelings.

Based on their summation of research findings, Minuchin et al. (1978) presented an abstract model of the similarities between families with a member suffering from anorexia. This characteristic example demonstrates how enmeshment may be more overt between some family members than others. The model describes a family in which the father and children spend a lot of time on each others beds cuddling and physically comforting each other. For example, one daughter may comb dandruff from her father's hair while another daughter observes, and the father may massage his daughters' legs. The mother, condoning this behaviour, may occasionally lie with her family on the bed, but is usually doing

From a social learning perspective, in enmeshed families the parents are regularly overinvolved in the children's behaviours both physically and through persistent intrusive observation and inquiry into the children's thoughts, feelings and actions. The children learn these interaction patterns by imitating these intrusive behaviours as they have been modelled to them by their parents.

When a child reciprocates parental intrusions/he is likely to be positively reinforced by his/her parents (e.g., via approval and love) for doing so. On the other hand, failure by a child to reciprocate the intrusive family behaviours (e.g., to frequently cuddle his/her father on the bed, and to leave bedroom doors open, if expected) may evoke non-reward or punishment from a parent.

There are likely to be high levels of mutual interdependence in overinvolved families. As family members adapt to high levels of reciprocal positive reinforcement, they may learn to become particularly sensitive to the responses of other family members. Thus, even a slight reduction in the level of positive reinforcement by a parent is likely to engender components of strong negative emotion in a child because of frustration from non-reward. This may evoke higher levels of attention seeking behaviour by the child in an attempt to return to normal high levels of social reinforcement.

housework instead. Also, in this family example the father does not allow closed bedroom doors, as it is considered insulting to shut out other family members.

As a consequence of enmeshment, each family member may be hyperresponsive to other family members. In enmeshed families, loyalty to each other and a sharing of feelings is valued above autonomy and privacy.

According to Minuchin et al. (1978) this weak boundary system in families of women with anorexia may extend beyond the nuclear family to include grandparents.

In depending on high levels of positive reinforcement from other family members it is likely that a child has learned to become highly reward-dependent.\* High TPQ Reward Dependence is considered to indicate a personality which tends towards being sentimental, socially sensitive, tender-hearted and dedicated (Svrakic et al., 1991).

Enmeshment may occur beyond the nuclear family, thus including grandparents, as enmeshed behaviours may have been modelled, observed, learned and performed through successive generations.

### Overprotectiveness

According to Minuchin et al. (1978), "the overprotectiveness of the psychosomatic family shows in the high degree of concern of family members for each other's welfare" (p. 31).\*\* Excessive concern extends beyond the parameters of the patient and the illness. "Nurturing and protective responses are constantly elicited and supplied" (Minuchin et al., 1978, p. 31). All family members are considered to put the concerns of other family members above their own. Failure to do so would be perceived as family betrayal.

Minuchin et al. (1978) claimed that, members of overprotective families are constantly alert to signs of distress in other family members, cueing their approaches accordingly.

From a social learning perspective, overprotectiveness occurs in families where parents display excessive concern for their children's welfare. Developmentally, children adapt to and learn the overprotective style modelled by their parents. Reciprocal nurturing and protective interactions are ongoing in such families. To avoid such reciprocal interactions would be perceived by family members as non-compliant or deviant behaviour and potentially to be punished. Overprotective behaviour in such families is matched to a set of beliefs about the dangers of the world. Children are taught to share these overprotective beliefs and behaviours both explicitly and implicitly.

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\* Reward Dependence is one of four temperament dimensions measured by the TPQ. See Method Chapter below for a description of the TPQ.

\*\* Maternal and Paternal Protection are dimensions of the PBI. See Method Chapter below for a description of the PBI.

Consequently, a child in such a family becomes overprotected by his/her parents from tensions and dangers which the parents perceive to be beyond the child's capabilities to cope with.

Parents maintain considerable control<sup>\*\*</sup> over the child disguised in a context of concern for his/her well-being, thus making it difficult for the child to object to such influence. For example, a child may be persuaded by his/her parents that in the interests of his/her safety s/he should not play with other children in the neighbourhood.

Minuchin et al. (1978) claimed that the overprotective family environment of a girl who later develops anorexia is typically child-oriented. The parents become so concerned with their daughter's behaviour that the daughter becomes overly conscious of herself and of parental expectations.<sup>\*\*\*</sup> "Her expectation from a goal-directed activity, such as studying or learning a skill, is therefore not competence, but approval. The reward is not knowledge, but love" (Minuchin et al., 1978, p. 59). The daughter becomes a "parent watcher". She makes extensive efforts to obey and please her parents. "Since the evaluation of what she does is another's domain, the child develops an obsessive concern for perfection"

The dominant response style in over-protective families is harm avoidance.\* In becoming overly anxious to protect his/her child from harm, the hypervigilant parent will act prematurely and excessively. The child is likely to be negatively or positively punished for risk taking and steps towards autonomy. Conversely, the child is likely to be highly reinforced for compliance, risk avoidance and remaining in close proximity to the parent. Such parental behaviour becomes negatively reinforced because the parent's anxiety about the child is reduced when the child takes fewer risks.

The child's parents have a powerful influence over him/her as they coerce the child into meeting their expectations in the guise of concern for his/her well-being. Jacobson and Martin (1976) referred to this form of manipulation as one-sided coercion. A receiver accepts one-sided coercive control as s/he does not acknowledge any injustice to be occurring. The child, in becoming a "parent watcher", has learned that if s/he becomes a perfectionist and meets or exceeds his/her parent's expectations this will strengthen the likelihood that they will reciprocate with positive reinforcement via approval and love. The child has learned to become increasingly dependent on such positive reinforcement from his/her parents.

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\* Harm Avoidance is a dimension of the TPQ. See Method Chapter below for a description of the TPQ.

\* \* Control is a dimension of the FES. See Method Chapter below for a description of the FES.

\* \* \* Parental Expectations is a dimension of the MPS. See Method Chapter below for a description of the MPS.

(Minuchin et al., 1978, p. 59).\*

Her goal is to gain parental approval and love, on which she becomes increasingly dependent. Also, the child who later develops anorexia "is socialized to act as the family expects and feels great responsibility for not embarrassing the family in the eyes of the extrafamilial" (Minuchin et al., 1978, p. 59).

As the child in an overprotective family environment is excessively concerned about the effects of his/her actions on others s/he hesitates to display initiative. Further, the intrusive parental concern for, and monitoring of, the child's behaviour, severely restricts the child's development of independence,\*\* competence and socialization outside the nuclear family environment. This results in a 'developmental lag' in the child.

The child who later develops anorexia has also learned to model behaviours to individuals outside the nuclear family that will reflect an admirable image of the family to the observer.

In overprotective families excessive engagement within the nuclear family hinders interaction with the wider social environment. Consequently, normal social development is impeded. Social development is also limited through the child being reinforced for harm-avoidant behaviours. Also, restriction of the child's social contact outside the nuclear family, limits observation and learning from models in the wider social environment. Rather, the child has observed and learned hypervigilance through parental modelling and reinforcement. Bandura (1986) argued that overprotective parents, in focusing on potential dangers, undermine the self-efficacy development of their children.

### Rigidity

According to Minuchin et al. (1978), "rigid families are heavily committed to maintaining the status quo. In periods when change and growth are necessary, they experience great difficulty" (p. 31). Such families fail to foster maturation in their children. Unlike healthy families, when a child from a rigid family enters adolescence

From a social learning perspective, parents in rigid families discourage their children from making normative developmental changes of increasingly observing and imitating the behaviours modelled by people outside the home. Some parents feel threatened by the increasing competence that normal maturational development

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\* Perfectionism is a major concept in this study and measured on several instruments. See Method Chapter below.

\* \* Dependence is a temperament subscale of the Reward Dependence dimension of the TPQ. Independence (of family members generally) is a dimension of the FES. See

his/her parents have difficulty changing the family's rules and patterns of behaviour to allow the child to develop those age appropriate behaviours considered normal in the transition towards autonomy.

"When the disequilibrium that is part of life threatens the psychosomatic family, all family members are rapidly mobilized to protect the system, particularly by coercing those members whose need for change is threatening the status quo" (Minuchin et al., 1978, p. 61).

A further difficulty for rigid families is that they are very vulnerable to events outside the family (e.g., changed occupation or loss of kin) as such events may be too overbearing for them to cope with. Such emotional overload may induce illness in a family member. Minuchin et al. (1978) argued that rigidity is typical in families of young women with anorexia, thus making change on a broader level difficult.

#### Lack Of Conflict Resolution

According to Minuchin et al. (1978), lack of conflict resolution occurs in families whose members have a low threshold for conflict.\*

fosters in children. This is particularly so during adolescence. Such parental behaviours do not adapt to the child's new repertoires.

In a commitment to maintain the status quo, the parents are not prepared to change the one-sided coercive process through which they control their children. Consequently, if a child in a rigid family observes and begins to imitate the behaviours of models outside the home the parents may coerce the child into remaining committed to the status quo. The likely response of such parents, when in conflict with a child attempting to become more autonomous, is to use aversive and punitive techniques, thus making it difficult for the child to change.

Just as rigid families have difficulty coping with developmental change within the family, they are also vulnerable to change in external events. When strongly influenced by environmental contingencies outside the nuclear family (e.g., loss of kin) such families lack the repertoire to adapt appropriately. Thus, illness in the family, such as anorexia nervosa, may be an adaptive response to the external stimuli by providing an opportunity for parents to focus on the daughter's illness.

From a social learning perspective, lack of conflict resolution occurs in families when normal interaction is blocked by aversive

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\* Conflict (within the family) is a dimension of the FES. See Method Chapter below for a description of the FES.

Thus, unlike normal families, difficult issues are not negotiated or resolved in families lacking in conflict resolution. Minuchin et al. (1978) argued that the very low thresholds for conflict in psychosomatic families is a consequence of the rigidity, overprotectiveness and enmeshed transactional patterns typical in such families. A strong religious or ethical code is usually used by the parents to justify such behaviours.

When families lack conflict resolution, harmony is highly valued, and conflict either denied or avoided. Minuchin et al. (1978) found that in many conflict avoidant families the members claimed that problems did not exist and thus there was no need for disagreement. In other conflict avoidant families it was found that, although disagreement was acknowledged, resolution was avoided.

According to Minuchin et al. (1978) psychosomatic families repeatedly engage in maladaptive interactions which include a child. "Because they are usually operating under conditions of stress and tension, the child is frequently involved in the role of conflict defuser" (Minuchin et al., 1978, p. 33).

Minuchin et al. (1978) claimed that, although the method of lack of conflict resolution varies from family to family, three typical transactional sequences occur. These are *triangulation*, *parent-child coalition*, and *detouring*. In the triangulation and parent-child coalition patterns the spouse dyad are usually divided in opposition or conflict and

behaviours. Parents model avoidance of direct confrontation to their children. Parents in overprotective, rigid, enmeshed families may persuade their children (via one-sided coercion) that family harmony is essential. Such parents are likely to reinforce conflict diminishing behaviours in their children and punish conflict tending behaviours. Thus the children learn to imitate their parents' denial and avoidance of direct conflict.

The absence of exposure to conflict in many conflict avoidant families creates a volatile situation in that family members become so desensitized to conflict that even small amounts of conflict are perceived as catastrophic. Thus the avoidance of conflict becomes intensified. As children in conflict-avoidant families fail to observe conflict resolution strategies being modelled they fail to develop tolerance for conflict in interpersonal situations. When conflict does arise, because such children lack conflict resolving skills, the conflict is likely to remain unresolved. Thus, in such families, there is likely to be lengthy periods of avoidance behaviours interspersed with brief aversive outbursts.

When triangulation or parent-child coalition occurs the child is caught in the coercive family process. The child, in behaving aversively towards one parent, usually receives high levels of positive reinforcement from the other parent (e.g., approval and praise). Consequently the child becomes highly reward-dependent. Non-compliance by the child to behave

the child pressed to side with one parent against the other.

When triangulation occurs the child is trapped into siding with one parent against the other. "Statements that impose a choice, such as 'Wouldn't you rather do it my way?' are used in the attempt to force the child to take sides" (Minuchin et al., 1978, p. 33).

Parent-child coalition occurs when the child tends to form a stable coalition with one parent against the other. The parent who is excluded from the coalition may behave in various ways depending on his/her motivation to unsettle the coalition.

Detouring occurs in conflict avoidant families when two members, unable to confront each other directly, detour their conflict by uniting in focusing on a problem about a third family member, either blaming or protecting them. For example, the parents of a daughter suffering from anorexia may focus on the daughter's illness, thus suppressing any conflict between themselves. In some situations one spouse (usually the male) if confronted by the other spouse regarding a contradictory issue, will detour the confrontation, or alternatively, physically remove him/herself from the confronter.

Minuchin et al. (1978) claimed that although these conflict avoidance strategies can also occur in healthy families, healthy families, unlike psychosomatic families, often use other methods of conflict confrontation and negotiation. Families who repeatedly engage in conflict avoidance strategies

aversively toward the nominated parent is likely to evoke withdrawal of positive reinforcement by the parent whom the child has sided with, or increased coercion for the child to behave aversively.

When conflict is detoured, by focusing on a third party, the two participants positively reinforce each other through their reciprocal interactions, and also avoid conflict with each other.

If one family member provides aversive stimuli towards another, and the receiver physically withdraws, or ignores the aversive stimuli (also effectively withdrawing), the initiator of the aversive behaviour will also withdraw due to lack of reinforcement to continue. This negatively reinforces the ignoring and withdrawing behaviour, leaving the conflict unresolved. When a relationship is marked by intense periods of withdrawal this tends to weaken the possibility of mutual positive influence. Emotional distancing occurs and there is an avoidance of positive emotion and a constant monitoring of each other for signs of negative affect.

Regarding marital interaction, Gottman and Krokoff (1989) found that conflict-engaging behaviour by a wife, and withdrawal by a husband, were strong predictors of marital distress over time. Similarly, Markman and Hahlweg (1993) found that male withdrawal from conflict was a predictor of divorce.

In describing conflict avoidant marital relationships Gottman and Krokoff (1989) claimed "behaviors that are functional for

remain troubled as "problems are left unresolved, to threaten again and again, continually activating the system's avoidance circuits" (Minuchin et al., 1978, p. 31).

'keeping the peace' in the present may leave unresolved critical areas of conflict that might undermine the relationship over time" (p. 47). Thus conflict avoidance was considered to be detrimental to marital satisfaction.

#### 4.3 SELVINI-PALAZZOLI AND VIARO

Other systems theorists who have studied the development of anorexia nervosa by retrospective clinical enquiry are Selvini-Palazzoli and associates (e.g., Selvini-Palazzoli, 1978, 1986; Selvini-Palazzoli and Viaro, 1988). As a result of clinical observations of 142 families in which a member suffered from anorexia nervosa, Selvini-Palazzoli and Viaro (1988) proposed a six stage model of the family interactional process in the development of anorexia nervosa. As Selvini-Palazzoli and Viaro's (1988) model is a narrowly structured account of the development of anorexia nervosa, it does not allow for a social learning theory reanalysis as readily as Minuchin et al's (1978) model. Hence, it is only briefly presented below.

Selvini-Palazzoli and Viaro's (1988) model essentially claims that during stage one (prior to the birth of the child) there is ongoing marital distress between the parents of the daughter who one day will develop anorexia nervosa. Stage two commences when the daughter is drawn into one of two characteristic relationship categories, favouring either the mother (Type A daughter) or father (Type B daughter).<sup>\*</sup> These relationships, which occur throughout the

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\* To avoid verbosity these two characteristic types of daughters will be described henceforth as Type A or Type B daughter. Selvini-Palazzoli and Viaro's (1988) application of Type A and B labels to such daughters is not intended to be associated with characteristic Type A and B personalities. The American Psychiatric Glossary defines Type A personality as characterized by "excessive drive, competitiveness, a sense of time urgency, impatience, unrealistic ambition, and need for control", and Type B personality as a characteristically "relaxed, easy-going demeanor; less time bound and competitive than Type A *personality*" (Stone, 1988).



daughter's childhood, alter during adolescence (stage three) in that the Type A daughter, traditionally her mother's 'good girl', discovers that her mother's attention is now directed elsewhere (usually toward another sibling). Feeling forsaken, the Type A daughter, redirects her attention and respect towards her father, siding with him against her mother. The already strong relationship between Type B daughter and her father intensifies during adolescence, with both continuing to side against the mother. Stage four occurs when, in a family environment of intense relational distress, the 'diet ploy' commences. For both types of daughters the diet "rapidly develops into silent protest and rejection of the mother" (Selvini-Palazzoli & Viaro, 1988, p. 133). Through the 'diet ploy' the daughter aims to regain her lost status within the family. However, the dieting does not affect the parents in the manner that the daughter expects. The mother interferes in the daughter's dietary habits, diminishing her husband's weak attempts to dissuade her. During stage five the daughter becomes increasingly angry, partially due to lack of support from her father who will not jeopardize his relationship with his wife. Consequently, the daughter intensifies her dieting behaviour to the extreme. In the final stage of Selvini-Palazzoli and Viaro (1988) model (stage six), the symptoms provide the daughter with excessive power and she returns to the privileged status of her childhood. Accepting that the symptom is there to stay, each family member develops self-benefiting, deceitful strategies from the symptom, such that some resistance would occur if the patient were to attempt recovery. Henceforth complex family interaction evolves around "the strategy of *holding up as 'privileged' a transgenerational dyadic relationship mother /daughter, father/daughter that is actually nothing of the sort*" (Selvini-Palazzoli & Viaro, 1988, p. 133). False privilege, based on insincere affection, operates as a weapon, usually against the spouse.\*

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\* A critical evaluation of Selvini-Palazzoli and Viaro's (1988) model follows the presentation (below) of Root et al.'s (1986) model.

#### 4.4 ROOT, FALLON AND FRIEDRICH

In parallel with systems theorists' studies of the development of *anorexia nervosa*, other systems theorists have retrospectively studied the development of *bulimia* in families (e.g., Root et al., 1986). In an approach, based on a blend of feminist and family systems theory, Root et al. (1986) explored developmental, maintenance and treatment issues of bulimia. Root et al.'s (1986) claims are based on "combined experiences in varied settings - inpatient, outpatient, community clinics, university counseling, and private practice" (p. viii).

Root et al.'s (1986) model is summarized below with references to social learning theory where pertinent, rather than presenting a full social learning commentary. The emphasis of the social learning theory discussion is primarily around the stage at which the eating disorder develops.

##### 4.4.1 The Bulimic Family System

Much of Root et al.'s (1986) family systems approach to women with bulimia is based on Minuchin et al.'s (1978) approach to women with anorexia nervosa. Root et al. (1986) outlined several key concepts regarding relationship patterns in families of women who suffer from bulimia: triangulation, enmeshment, homeostasis, and, communication. Embedded in these relationship patterns, Root et al. (1986) identified three characteristic types of families of patients with bulimia: 'perfect', 'overprotective', and 'chaotic'. The perfect family "appears to be a success or 'rags to riches' story; the symptomatic member is a 'golden girl.' Hallmarks of the perfect family include: an emphasis on *appearance, family reputation, family identity, and, achievement*" (Root et al., 1986, p. 83). The overprotective family is claimed by Root et al. (1986) to be similar to the psychosomatic families described by Minuchin et al. (1974). Overprotective

families are characterized by "lack of confidence in the symptomatic member's competence, the lack of rules for age-appropriate behavior in the family, and the impact of unresolved family-of-origin issues, which are often related to victimization experiences in the mother" (Root et al., 1986, p. 98). Whereas a characteristic of perfect and overprotective families is rigid rules, for chaotic families it is inconsistent rules. Other characteristics of chaotic families are parental unavailability, victimization experiences, frequent venting of anger, and substance abuse.

### Triangulation

Furthering Minuchin and associates' concept (e.g., 1974, 1978), Root et al. (1986) argued that triangulation can stabilize the family system through relieving tension between two family members (usually the spouses). Root et al.'s (1986) overall concept of triangulation encompasses Minuchin et al.'s (1978) concepts of triangulation, parent-child coalition, and detouring. Whilst agreeing with Minuchin et al.'s (1978) definitions of these three concepts, Root et al. (1986) argued that the common element in each is triangles or triads. Triangulation (in the specific sense) occurs when one of two family members (usually the parents) who are in conflict with each other forms a coalition by recruiting a third family member (usually a child) to side with him/her against the other family member. Parent-child coalitions differ from triangulation in that, although a parent and child side with each other against the other parent, conflict is not very overt. The other parent is considered peripheral. The intensity of the parent-child coalition hinders the child's development of autonomy.

From a social learning perspective, Root et al.'s (1986) concepts of triangulation (in the specific sense) and parent-child coalitions demonstrate how the development of autonomy can be hindered in a child. Although a parent and child mutually reciprocate positive reinforcement (e.g., praise, attention) this

includes excessively high levels of parent-child interaction. Moreover, for parent-child coalitions excessively low levels of interaction occur between the two spouses and between the child and excluded parent.

Root et al. (1986) claimed that triangles in family systems can also assist the detouring of conflict. Parents can suppress or detour conflict against each other through their child. When detouring-attacking occurs, the child (scapegoat) is perceived as a behaviour problem. "The parents differ about how to handle the child and are frequently inconsistent, but both are highly controlling/ rejecting of the child" (Root et al., 1986, p. 42). When detouring-supportive occurs the parents avoid conflict with each other and mutually focus on supporting a "sick" child. In social learning terms, detouring-attacking demonstrates how parents negative affect towards each other is overtly directed towards the child with parents mutually reinforcing each other in disapproving of the child's behaviour. The parents inconsistently reinforce and punish the child. On the other hand, detouring-supportive behaviour demonstrates how parents avoid reciprocating negative affect towards each other through mutual positive reinforcement of each other in their focus on the "sick" child.

Root et al. (1986) claimed that the form of triangulation varies according to the family type. In overprotective families, as expression of conflict is discouraged, detouring-supportive or parent-child coalition (rather than detouring-attacking) triads are usually used. Chaotic families lack predictability and consistency thus fostering triangulation and rapidly shifting coalitions within the family. There is usually a precocious pseudomaturity and avoidance of attachment and cohesion<sup>\*</sup> in the children, who tend to be prematurely cast out of the family home. The perfect family type places high value on "appearance, family reputation, family identity and achievement" (Root et al., 1986, p. 45). Triangles

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\* Attachment is a temperament subscale of the Reward Dependence dimension of the TPQ. Cohesion (within the family) is a dimension of the FES. See Method Chapter below for descriptions of the TPQ and FES.

tend to be subsumed in the facade of family well-being. Root et al. (1986) claimed that in perfect families women with bulimia often have a history of anorexia nervosa and that the characteristics of such families have been well described by Minuchin et al. (1978). In perfect families one parent (usually the male) tends to be authoritative and controlling<sup>\*</sup> whereas the other parent endeavours to subdue the authoritativeness.

In social learning terms the varying forms of triangulation according to family type demonstrate the varying reinforcement schedules among different family types. For example, chaotic family members reinforce each other inconsistently with the consequences of behaviours being unpredictable. Identical behaviours produced by a child may be rewarded by a parent on one occasion yet punished on another occasion with the reinforcement patterns dependent on the mood of the parent at the time, thus evoking a fear of attachment and cohesion in the child. The reinforcement contingencies in perfect family environments are associated with high expectations of family members. Children tend to be positively reinforced for imitating perfectionist appearances and behaviours modelled by the parents and for concealment/denial of strong emotions and conflict. High expectations of family members are met through rewarding perfectionist behaviours and not rewarding, or punishing, non perfectionist behaviours. One parent is usually controlling, and thus challenge to his/her power is likely to evoke punishment.

### Enmeshment

Root et al. (1986) argued that enmeshment overlaps with triangulation and existed in every family of women with bulimia that they encountered.<sup>\*\*</sup> Root

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<sup>\*</sup> Control (within the family) is a dimension of the FES. See Method Chapter below for a description of the FES.

<sup>\*\*</sup> 1. The concept of enmeshment has been described above (see Minuchin et al., 1978).

2. As stated earlier, Root et al.'s (1986) concept of triangulation, generally, is similar to Minuchin et al.'s (1978) concept of lack of conflict resolution.

et al. (1986) also echoed Minuchin et al.'s (1978) claim that enmeshment is characteristic of rigid families. From a social learning perspective, the overlap between enmeshment and rigidity may be reflected in the rewarding of children for observing and imitating behaviour modelled by the parents and punishing the imitation of any behaviour modelled outside the family environment. The most common form of enmeshment Root et al. (1986) found in treatment sessions was when one family member spoke for another and when children checked with a parent before answering a question. From a social learning perspective, perhaps this reflects lack of self-efficacy in children who are excessively dependent on their parents for positive reinforcement, or a history of non-reinforcement for independent speaking and/or punishment for independence.

### Homoeostasis

Root et al. (1986) described homoeostasis in families as the equilibrium brought about by self-righting mechanisms. Although it is normal for family systems to periodically become unbalanced, they tend to operate within set limits. "Limits are maintained through feedback that either preserves the status quo (negative) or promotes newness (positive)" (Root et al., 1986, p. 48). In a symptomatic family, a member's changed behaviour instigates a powerful drive to restore homoeostasis, whether pleasant or unpleasant, as this is what is familiar and customary. Hence, symptoms (e.g., bulimia) may occur as a reaction to system imbalance, and thus function to return the family to homoeostasis.\* For example, a severely troubled marital relationship may become less severe when a symptomatic child becomes the primary focus of family attention.

According to Root et al. (1986) "there are bidirectional relationships between marital discord, life-cycle pressures, and the emergence of bulimia. The

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\* The preservation of homoeostasis in symptomatic families seems similar to Minuchin et al.'s (1978) concept of rigidity.

multitude of interrelationships makes for a conservative system that readily returns to a former balance" (p. 49). The reciprocal determinism facet of social learning theory is clearly demonstrated in families where a member suffers from bulimia. For example, a daughter's expression of bulimia may serve as a context within which her parents' expression of marital discord is reduced, and the parents' reduction in expressed marital discord may consequently serve, in part, to maintain the bulimia. Thus the daughter's behaviour is contributing directly to producing the reinforcement contingencies that are impacting on her. The same scenario is true for the parents. Similarly, life-cycle pressures on a family environment, such as the normal increasing of autonomy in children, may impact negatively on the marital relationship just as a distressed marital relationship may inhibit the achievement of autonomy in children.

### Communication

Root et al. (1986) claimed that several communication theory axioms can explain communication in family systems, such as, 'all behaviour (even silence) is communicative', or that, in addition to the content of a communication, the relationship/ command aspect can relay a very different message. In families of women with bulimia discrepancies typically occur between what people say and what they mean. As relationship messages differ from what is expressed this teaches the child to "selectively ignore reality, become confused, not know what she feels etc." (Root et al., 1986, p. 51). For example, a father in a perfect family may say that his mother was a wonderful woman while a painful look appears on his face. In social learning terms, the double messages portrayed by such parents are modelled to their children and consequently observed and imitated. Children in perfect families may learn to avoid overt expression of negative emotions as this may be punished by their parents. Hence, aversive emotions may be expressed more subtly.

#### 4.4.2 The Family Life-Cycle in the Development of Bulimia Nervosa

Root et al. (1986) claimed that some of the difference between anorexia nervosa and bulimia can be accounted for by the developmental stage at which the family of sufferers becomes stuck. From this perspective, each stage of the family life-style presents a new set of tasks to be mastered. Although no stage is missed out by a family, different families will accomplish tasks at different times, in different ways, and, with varying degrees of success. The level of success will affect the family's ability to deal with the following stages. Root et al.'s (1986) model outlines family life-cycle stages of marriage, birth of the child, the family with young children, adolescence, and, launching.

##### Marriage

According to Root et al. (1986) a family life-cycle commences when the two new spouses become married. Both partners need to form more independent relationships with their parents, yet remain loyal, while integrating more with each other. Root et al. (1986) claimed that many parents of women with bulimia suffer difficulties establishing appropriate boundaries from their parents at this stage. Overprotective families are typically overinvolved and chaotic families overly distant with rapidly shifting alliances. In perfect families a spouse appears to have integrated happily, but is likely to be overinvolved with his/her parent(s). The husband is often "dominating and narcissistic."

##### Birth of the Child

Root et al. (1986) claimed that when a baby is born a marital dyad must alter to become partly a parental dyad, but family systems of women who develop bulimia tend to be imbalanced. For example, a mother may be overinvolved with the infant and the husband more peripheral. A mother's overinvolvement with a new baby may reduce conflict between the spouses, thus stabilizing the



system, but the stability is only temporary due to parent-child enmeshment, rigidity and lack of conflict resolution.

### The Family With Young Children

According to Root et al. (1986) researchers have identified two primary tasks of families in raising young children. Firstly, the child's increasing independence<sup>\*</sup> from the family must be balanced with a sense of connectedness and belonging. Secondly, the expectations placed on the child must be balanced.<sup>\*\*</sup> Such expectations, which should be neither too high nor too low, may range from externally directed expectations of academic achievement to family-directed expectations of weight maintenance or expression of feelings. Root et al. (1986) argued that families of women with bulimia have difficulty with the balancing acts outlined. For example, a daughter in a perfect family may be characterized by a pseudo-autonomy and excessively high expectations placed on her. From a social learning perspective, in perfect families children must characteristically meet excessively high parental expectations before receiving positive reinforcement. Such children observe their parents modelling the perfect family to the outside world. Consequently, these children learn to model perfectionist behaviours to others. Thus the observer may perceive the child as more self-efficacious than s/he actually is.

According to Root et al. (1986), "The overprotective family seems to emphasize belonging and no expectations" (p. 69). Arguably, the notion of overprotective families emphasising *no* expectations seems extreme and contradictory with other claims made by Root et al. (1986). For example, in a chapter titled "The Overprotective Family", Root et al. (1986) argued, "Actions that lead to separation are discouraged" (p. 101). Surely this implies an expectation of the

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<sup>\*</sup> Dependence is a temperament subscale of the Reward Dependence dimension of the TPQ. Independence (of family members generally) is a dimension of the FES. See Method Chapter below for descriptions of the TPQ and FES.

<sup>\*\*</sup> Parental Expectations is a dimension of the MPS. See Method Chapter below for a description of the MPS.

child to refrain from autonomy seeking behaviours. Another example implying definite expectations is, "Feelings of sadness and anger are not allowed expression in the overprotective family" (Root et al., 1986, p. 101).

### Adolescence

Root et al. (1986) argued that in families where children develop bulimia it is during the "child's" adolescence that stuckness is most obvious. At this stage, when family boundaries need to be most flexible to allow for increasing autonomy by the child, some families have difficulties with the impending loss of the child. If a child (particularly the youngest) leaves home (or contemplates doing so) a refocus on the marital dyad occurs. Moreover, increased difficulty in coping with adolescents can fuel parental conflict. For those who develop bulimia, adolescence is the stage at which symptoms are most likely to emerge, as, during adolescence, not only the child, but also the parents, are expected to negotiate a life-cycle transition (i.e., two life-cycle transitions). This accentuates relationship problems in the family. An adolescent daughter's move toward autonomy may begin a move by her parents towards increasing control over her, particularly in overprotective families. When bulimia develops, the family remain stuck at this stage of the life-cycle.

From a social learning perspective, Root et al.'s (1986) model may be seen to claim that a daughter's pending departure from the family environment evokes a fear by her parents of markedly reduced interactions with her, and markedly increased interactions with each other. Also, the difficulty for parents in coping with aversive adolescent behaviours may induce a focus on the parent's interaction difficulties and in turn evoke an increase in reciprocal aversive interaction between the parents. Hence, bulimia may emerge during adolescence as a response to increased aversive family processes such as increased levels of reciprocal aversive interactions between parents, or the exertion of increasing parental control over the adolescent - evoked by parents

feeling threatened by their adolescent's increasingly autonomous behaviour. Consequently, the adolescent does not sufficiently observe and imitate healthy age-appropriate behaviours modelled outside the family environment.

### Launching

According to Root et al. (1986) leaving home (launching) requires family separation without severing the family relationship, and launching is more likely to be successful if it is from a stable, supportive home base. Many women who develop bulimia do so at the launching stage because they have not become sufficiently autonomous during their adolescence to cope with the independence that launching provides. Root et al. (1986) claimed that this is particularly true in overprotective families, as adolescent differentiation achieved in such families is only a pseudo-autonomy. Root et al. (1986) gave an example of a woman who had left an overprotective family. When she telephoned her mother cancelling a visit home her mother complained of loneliness and depression. That evening the daughter's first binge/purge episode occurred followed by a feeling of relief. In social learning terms, and concordant with the "Anxiety Reduction Model" (outlined above; e.g., Rosen & Leitenberg, 1985), this example demonstrates how the mother induced negative emotions (guilt) in her daughter for not interacting excessively with her and how the daughter's bingeing then gave her some escape from the negative emotions. The distress induced from bingeing then evoked purging.

Root et al. (1986) further claimed that parental life-cycle transitions are relevant to a daughter's successful launching. If parents lives undergo severe change, such as divorce, remarriage, or 'warfare' between ex-spouses, during the stage a child is endeavouring to become autonomous, the child may get caught up in these problems, or feel excluded from parents' new marital relationships. Hence, successful launching is unlikely.

#### 4.5 CRITICISM OF FAMILY MODELS OF ANOREXIA AND BULIMIA NERVOSA:

- MINUCHIN ET AL. (1978)
- SELVINI-PALAZZOLI AND VIARO (1988)
- ROOT ET AL. (1986)

##### 4.5.1 Criticism of Minuchin et al. (1978)

Minuchin et al. (1978), in identifying four characteristics of “psychosomatic family” functioning, provided an influential contribution to the study of women with anorexia nervosa. Indeed, Minuchin et al.’s (1978) model, now almost two decades old, remains widely recognized in understanding families of such women.

The viewing of Minuchin et al.’s (1978) model from a social learning perspective has accentuated the considerable overlap across the four family characteristics (enmeshment, overprotectiveness, rigidity and lack of conflict resolution). For example, an overprotective family environment, with excessive nurturing and the reinforcing of children for remaining in close proximity to their parents, is likely to contribute to enmeshment. Reciprocally, the parental overinvolvement with children in enmeshed families is likely to contribute to overprotective behaviours being exhibited. Overprotectiveness also seems to be reflected in rigidity, as the overprotective family style, with harm avoidance behaviours being dominant, allows for little flexibility (and conversely, much rigidity) of behaviour by the children. Rigidity also seems to be a reflection of lack of conflict resolution skills. For, opposite to rigidity is likely to be problem solving (e.g., conflict resolution). The “psychosomatic families” outlined by Minuchin et al. (1978) have behavioural deficits in that they can not resolve conflict because they lack the requisite skills. Consequently, such families are rigid.

Although the family characteristics identified by Minuchin et al. (1978) do not appear to be independent constructs, they provide a useful tool for treatment as, according to Minuchin et al. (1978), they differentiate “psychosomatic families” from healthy families. Minuchin et al. (1978) claimed that all four family characteristics existed in *every* “psychosomatic family” observed. Clearly, a clinician would be wise not to assume from this finding that all four of these family characteristics are a necessary component of all “psychosomatic families”, and conversely, that families in which these four characteristics exist necessarily have (or will have) a “psychosomatic child”. To do so would be to overlook the remarkable resilience of some children, and also the influence on children of the environment outside the family.

Although the four family functioning characteristics, identified by Minuchin et al. (1978), were found in all the “psychosomatic families” observed, Minuchin et al. (1978) offered a brief but valuable explanation of why a child in a “psychosomatic family” may develop anorexia nervosa rather than some other “psychosomatic disorder”. The most prominent aspects of this explanation are arguably that families in which a member develops anorexia nervosa are essentially “child-oriented”. Also, “the child develops an obsessive concern for perfection [and] ... the child is socialized to act as the family expects and feels great responsibility for not embarrassing the family in the eyes of the extrafamilial” (Minuchin et al., 1978, p. 59).\*

#### 4.5.2 Criticism of Selvini-Palazzoli and Viaro (1988)

The model developed by Selvini-Palazzoli and Viaro (1988) provides more specific detail of family interaction patterns than the other systems models

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\* Minuchin et al.'s (1978) emphasis on an association between perfectionism and family interaction for children who develop anorexia nervosa is consistent with the theoretical underpinnings of this study.

outlined. However, in being more specific than other models, Selvini-Palazzoli and Viaro (1988) increased the risk of inaccuracy in interpreting their findings. For example, Selvini-Palazzoli and Viaro (1988) claimed that during stage four the daughter's dieting involves a shedding of her mother's behavioural values in favour of those of her peer group in "silent protest and rejection of the mother" (p. 133). However, in making this claim Selvini-Palazzoli and Viaro (1988) contradict the finding of several empirical studies that daughters may partially learn their dieting behaviour from observing and imitating such behaviour modelled by their mothers, and that mothers of eating disordered daughters were more likely to have encouraged their daughters to diet than mothers of non eating disordered daughters (e.g., Pike & Rodin, 1991; outlined above).

Moreover, in attributing the daughter's movement towards her peer group to a protest against her mother, Selvini-Palazzoli and Viaro (1988) ignored the widely accepted view that typical adolescent development involves increased observing and imitating of the behaviours modelled by one's peers, and that such behaviours may not be condoned by one's parents. This is a normal step towards autonomy (e.g., Attie & Brooks-Gunn, 1992; Gray, 1988). Further, there tends to be a preoccupation with dieting behaviour among female adolescents (e.g., Gray, 1988; Huon, 1994).

Another feasible scenario is that the girls who developed anorexia nervosa in Selvini-Palazzoli and Viaro's (1988) clinical observational studies may have commenced dieting in a desperate attempt to receive positive reinforcement from their peers because their mothers were no longer providing this for them. Such daughters, raised in an enmeshed environment where considerable positive reinforcement (via parental approval) came to be expected by them, may not have been so much reciprocating rejection towards their mothers as seeking a new source of positive reinforcement in their peers. Thus, the dieting

behaviour may be more motivated by the daughter's need for considerable attention and approval than by a need to reject her mother. Hence Selvini-Palazzoli and Viaro (1988) may have overlooked the possibility that dieting behaviour in women who develop anorexia nervosa may be evoked by a need to replace the high attention received from the mother and/or father during childhood. Evidence of this is found in stage six of Selvini-Palazzoli and Viaro's (1988) model where it is claimed that parental concern about the daughter's dieting behaviour leads to her regaining the high parental attention enjoyed during childhood. This increased attention positively reinforces the daughter's dieting behaviour. Thus it would seem that high reward dependence of the woman with anorexia nervosa is likely to have contributed to her dieting behaviour.

#### 4.5.3 Common Threads in Family Models of the Development of Anorexia Nervosa

Regarding families of women with anorexia nervosa, the clinical observational findings of Minuchin et al. (1978), and of Selvini-Palazzoli and Viaro (1988), although presented very differently, have much in common. Interestingly, both models, although similar, appear to have been developed independently of each other during parallel time periods in different countries and languages. Much of Selvini-Palazzoli and associates foundation work for their model, in Italy, was published during the 1970s (e.g., Selvini-Palazzoli, 1978). Minuchin et al.'s foundation work was in America (Minuchin et al., 1974). The convergence of these independent groups of researchers adds support to their theoretical claims.

Minuchin et al.'s (1978) description of enmeshment demonstrates how high levels of mutual interdependence are likely to exist in such overinvolved families. Similarly, Selvini-Palazzoli and Viaro (1988) implied that a daughter

who develops anorexia nervosa has had high levels of mutual positive interaction with one or other parent during her childhood. Thus, in both models of the family environments of women with anorexia nervosa, it is likely that the child who later develops anorexia nervosa has been highly reward-dependent. Selvini-Palazzoli and Viaro's (1988) outline of the childhood relationship between the daughter and her favoured parent (stage two) seems to be an example of the parent-child coalitions Minuchin et al. (1978) described within the context of lack of conflict resolution.

Selvini-Palazzoli and Viaro's (1988) model demonstrates that, if a daughter has been interacting extensively with her mother, and if at some stage there is a reduction in the level of positive reinforcement of the daughter by the mother, such as the mother's attention becoming redirected towards another sibling, this is likely to engender frustration and negative emotion in the daughter. Although not mentioned by Selvini-Palazzoli and Viaro (1988), this may evoke higher levels of maternal attention seeking behaviour by the daughter before lack of response leads to extinction. Similarly, in Minuchin et al.'s (1978) model, a child in an enmeshed family environment is likely to become highly sensitive to the responses of other family members and learn to expect high levels of positive reinforcement (i.e., reward dependence). Thus, even a slightly reduced level of positive reinforcement by a parent may evoke negative emotion in a child because of frustration from non-reward. Consequently, as in Selvini-Palazzoli and Viaro's (1988) model, for Minuchin et al. (1978), the child is likely to participate in attention seeking behaviour in an attempt to regain positive reinforcement from the parent.

According to the models of both Minuchin et al. (1978) and Selvini-Palazzoli and Viaro (1988), failure by the daughter to regain the high positive reinforcement from the parent is likely to evoke a reduction in the daughter's behaviour towards the parent and a seeking of positive reinforcement



elsewhere (either from the other parent and/or peers). Although this is only implicit in Minuchin et al.'s (1978) model (as it does not include a developmental sequence) it is explicitly described in stage three of Selvini-Palazzoli and Viaro's (1988) model for the daughter who had been close to her mother in earlier years, and now turns to her father for attention. The siding with the father against the mother, during stage three, is a further example of what Minuchin et al. (1978) termed parent-child coalition. Also in Selvini-Palazzoli and Viaro's (1988) model, when the mother's interference in the daughter's dieting evokes a parental togetherness in focusing on the daughter, this is similar to Minuchin et al.'s (1978) description of detouring (i.e., avoidance of conflict between the spouses by focusing on a third party). The final stage of Selvini-Palazzoli and Viaro's (1988) model demonstrates similarities to Minuchin et al.'s (1978) concept of family rigidity in that each family member benefits sufficiently from the daughter's symptoms so as some resistance would occur if the patient attempted to recover.

#### 4.5.4 Comparison of Family Models of Anorexia and Bulimia Nervosa, and, Criticism of Root et al. (1986)

The developmental models of anorexia nervosa (outlined above) are not only similar to each other, but also share several features with Root et al.'s (1986) developmental model of bulimia. Root et al.'s (1986) model of the family system of women with bulimia (as opposed to Root et al.'s life-cycle model) appears to be essentially based on Minuchin et al.'s (1978) family environment model. Indeed, Root et al. (1986) made numerous references throughout to Minuchin et al. (1978). It seems that Root et al.'s (1986) family systems model provides little material not already established by Minuchin et al. (1978) - except that Root et al.'s (1986) model is of families of women with bulimia rather than anorexia nervosa.

Root et al.'s (1986) model of family systems of women with bulimia essentially echoes Minuchin et al.'s (1978) four characteristics of "psychosomatic family" environments, although under different labels in two instances. However, Root et al. (1986) have extended Minuchin et al.'s (1978) explanation of family environment characteristics in outlining examples differentiating between three specific types of families of women with bulimia.

Root et al.'s (1986) concept of "Triangulation" is almost identical to "Lack of conflict resolution" (Minuchin et al., 1978). "Homeostasis" (Root et al., 1986) is almost identical to "Rigidity" (Minuchin et al., 1978). "Enmeshment" is identical for both Minuchin et al. (1978) and Root et al. (1986), except that Root et al.'s (1986) outline of boundary violations in chaotic families demonstrates a different style of enmeshment to that characteristic of families of women with anorexia nervosa. "Overprotectiveness" (Minuchin et al., 1978) had received a slightly different slant by Root et al. (1986) in that it is considered to be a specific family type. Rather than "Overprotectiveness", the fourth family system characteristic identified by Root et al. (1986) is "Communication." This section, essentially about family interaction, although brief, provides one or two interesting points.

Although Root et al.'s (1986) family system model has many facets which are essentially a repetition of Minuchin et al. (1978), and thus provide little new knowledge about family environments of women with bulimia, it does suggest that there are many similarities in the family environments of women with anorexia nervosa and women with bulimia. This in itself may be an important contribution to the understanding of family environments of women with eating disorders.

Whereas the family *systems* model of Root et al. (1986) is very similar to that of Minuchin et al. (1978), the presentation style of Root et al.'s (1986) family *life-*

*cycle* model is somewhat similar to Selvini-Palazzoli and Viaro's (1988) stage model in that both outline a sequence of developmental stages.\* Root et al.'s (1986) initial life-cycle stage of "Marriage" is similar to stage one of Selvini-Palazzoli and Viaro's (1988) model in that they involve communication difficulties within the marital dyad.

All five stages of Root et al.'s (1986) family life-cycle model essentially evolve around a theme of balancing a sense of autonomy with a sense of connection within the family. Root et al. (1986) make a somewhat original contribution within this theme by providing useful examples of how families of women with bulimia tend to be "stuck" at one or other extreme, and how such problems tend to be associated with the healthiness of the parental relationship. For overprotective families there tends to be an overconnectedness with the child, and thus difficulty allowing launching\*\* whereas for chaotic families there tends to be inconsistent treatment of the child who may eventually be expelled from the family.

Root et al.'s (1986) most original contribution is arguably the identification of three family types of women who suffer from bulimia (Overprotective, Perfect, and Chaotic), although some overlap exists between these family types. However, as pointed out earlier, the overprotective family type seems to be essentially a repetition of one of Minuchin et al.'s (1978) family environment characteristics, with a few additions. In fact, Root et al. (1986), in describing the overprotective family type, claimed "the overprotective family ... most closely parallel Minuchin's (1974) observations of psychosomatic families which are enmeshed and overprotective, lack conflict resolution skills, and involve

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\* Although the model of Selvini-Palazzoli (1988) examined here is superseded by Root et al.'s (1986) publication, Selvini and associates published numerous features of their model during the 1970s, thus preceding Root et al. (1986).

\*\* The overprotective family is similar to Minuchin et al.'s (1978) model of typical families of women with anorexia nervosa.

children in marital conflict" (p. 98). Thus, such families have the four family characteristics identified by Minuchin et al. (1978).

The perfectionism considered by Root et al. (1986) to be characteristic of the "Perfect" family was briefly addressed in Minuchin et al.'s (1978) outline of typical families of women anorexia nervosa, and not mentioned at all in Selvini-Palazzoli and Viaro's (1988) model. However, the concept of perfectionist families of women with anorexia nervosa has been identified by other researchers (e.g., Bruch, 1978). In fact, Root et al.'s (1986) reference to "smiling depression" is a repetition of the concept forwarded by Bruch (1978).

In spite of considerable overlap between Root et al.'s model and models of anorexia nervosa, the "Chaotic" family type identified by Root et al. (1986) appears to be a unique and valuable contribution. Although numerous researchers (e.g., Bulik, 1987; Leon et al., 1985) have identified some of the characteristics typical of chaotic families (e.g., alcoholism, abuse, in families of women with bulimia) no publication appears to have developed this as succinctly as Root et al. (1986) in their outline of a specific "Chaotic" family type. Clearly, such a family type was not appropriate to Minuchin et al.'s (1978) and Selvini-Palazzoli and Viaro's (1988) models as chaos (although sometimes existent) is not characteristic of families of women with anorexia nervosa.

#### 4.6 CONCLUSION

Each of the three models outlined provides a major contribution to theories about the development of anorexia nervosa or bulimia. Minuchin et al.'s (1978) and Selvini-Palazzoli and Viaro's (1988) models are particularly innovative and yet complementary. Arguably, the compatibility of the claims in these two models emphasises their potential importance. Root et al.'s (1986) model,

although less original, makes a valuable contribution to the understanding of bulimia such as identifying many characteristics common to families of women with anorexia nervosa and bulimia.\* Root et al.'s (1986) extension of the models of anorexia nervosa, to identify problems characteristic of many families of women with bulimia (but not anorexia nervosa) has filled a void in the literature, especially with the identification of the "Chaotic" family as a characteristic type.

Finally, although acknowledging the utility of the systems models (outlined above), it seems noteworthy that such models may have been based on biased samples, in that observations were of families of clinically referred individuals. Consequently, the findings may not apply to women with anorexia and/or bulimia nervosa generally.

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\* This is not surprising as research indicates that approximately 30% to 50% of women with anorexia nervosa develop symptoms of bulimia (Johnson & Lewis, 1984).

## CHAPTER FIVE

# THE NATURE OF PERFECTIONISM, AND ITS ASSOCIATION WITH FAMILY INTERACTION AND WITH EATING DISORDERS

In my eagerness to win the approval of my parents and the admiration of my sisters, I performed my good-little-girl routine to the hilt. It made me feel valuable, loved, worth something. The praise and favourable comments it elicited were enough to motivate me to keep it up for life - almost. In fact I had already become sensitive to the slightest hint that perhaps I wasn't measuring up to what I thought I was supposed to be in order to deserve love, acceptance and praise (O'Neill, 1982, p. 4).

### 5.1 INTRODUCTION

The fundamental family interaction factors associated with anorexia and/or bulimia nervosa, discussed in Chapter Four, have been claimed to typify other dysfunctional family environments. For example, the four family characteristics identified by Minuchin et al. (1978) of enmeshment, overprotectiveness, rigidity, and lack of conflict resolution, were found to differentiate healthy families, not only from families with a child suffering from anorexia nervosa, but also from families with a child suffering from psychosomatic diabetes or asthma. However, whereas family interaction associated with the development of perfectionism in the psychosomatic child was found by Minuchin et al. (1978) to be characteristic of families of women with anorexia nervosa, such interaction was not claimed to be characteristic of the other dysfunctional family environments observed by Minuchin et al. (1978). Thus, it is argued that factors associated with the development of dysfunctional perfectionism in a child differentiate the family environments of women with anorexia nervosa from the family environments of numerous other psychopathological disorders.

In furthering this argument, various individual factors associated with anorexia and/or bulimia nervosa (discussed in Chapter Three, above), such as poor self-esteem and depression, have been associated with numerous other psychopathologies (e.g., Beck et al., 1979; Sullivan, 1978). EDI measures, designed to assess characteristics of individuals with eating disorders have also been criticized for their lack of specificity to individuals with eating disorders. For example, Cooper, Cooper and Fairburn (1985), in comparing women with anorexia nervosa with psychiatric out-patients and with healthy women on EDI measures, found that, except for the three subscales concerning dieting,\* the out-patients scored significantly higher than the controls on all subscales other than Perfectionism. Although the psychiatric out-patients scored significantly lower than the women with anorexia nervosa on all subscales, except Maturity Fears, further analysis revealed that the differences were partially accounted for by severity of psychological disturbance. Consequently, Cooper et al. (1985) concluded that the "subscales may reflect the general level of psychological disturbance rather than features specific to patients with eating disorders" (p. 130). As Perfectionism was the only EDI measure not concerned with dieting that did not differentiate the psychiatric out-patients from the healthy women it is seems that perfectionism may be a key personality characteristic associated with anorexia and/or bulimia nervosa.

The purpose of this chapter is to argue for the important function that dysfunctional perfectionism plays for females as a marker that distinguishes psychopathology associated with anorexia and bulimia nervosa from numerous other forms of psychopathology. Both clinical observational and empirically based research have examined the presence of perfectionism in females suffering from anorexia and bulimia nervosa (outlined below). The

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\* These subscales are Drive for Thinness, Bulimia, and Body Dissatisfaction.

perfectionist personality characteristic has been found to be highly associated with these eating disorders (e.g., Bruch, 1978; Garner, Olmsted & Polivy, 1983; Reyna-McGlone & Ollendick, 1989; Slade, 1982).

## 5.2 WHAT IS PERFECTIONISM?

### 5.2.1 Definitions of Perfectionism

A difficulty in perfectionism research is the variety of definitions which exist. Consequently, perfectionism has often been regarded as a broad construct and only loosely defined in research. This has confounded comparisons across the findings of various studies. For the purpose of this research a clear understanding of the nature of perfectionism is considered essential.

Psychiatric glossaries do not provide us with a definition of perfectionism as, unlike compulsiveness, perfectionism is not a clinical disorder. The *Concise Oxford Dictionary* (1991) defines perfectionism as "the uncompromising pursuit of excellence".

Definitions of perfectionism by researchers have tended to be formed from clinical insights. For example, Burns (1983) claimed that "perfectionism is not the same as the healthy pursuit of excellence. Perfectionism involves the compulsive and relentless pursuit of goals that are unrealistically high" (p. 221).

Also from a clinical observational perspective, Missildine (1963) claimed that "one of the most important distinctions between the efforts of the true masters of their craft and those of the perfectionistic person is that the striving of the first group brings them solid satisfaction. They are happy



with the results. Their efforts enhance their self-esteem. They rejoice in their mastery" (p. 77). On the other hand Missildine (1963) claimed that the perfectionist's striving is accompanied by a feeling of not being good enough, of needing to do better. This prevents the satisfaction which should result from a superior performance. "He [sic] is miserable in spite of his [sic] success and must strive to do 'still better,' underrating whatever he [sic] has accomplished" (Missildine, 1963, p. 76).

In a similar vein Hollender (1965) argued that perfectionistic individuals differ from artists or surgeons who gain pleasure from their painstaking achievements, but can be less precise when the occasion requires. Consequently, Hollender (1965) defined perfectionism as "demanding of oneself or others a higher quality of performance than is required by the situation" (p. 103).

Hollender (1965) also emphasised that perfectionistic individuals focus on the negative rather than the positive aspects of a situation. "The perfectionist finds it difficult to sort out items in the order of their importance or to maintain a sense of proportion.... He [sic] is constantly on the alert for what is wrong and seldom focuses on what is right" (Hollender, 1965, p. 95). This description demonstrates the negativity of perfectionism which is potentially damaging and even self destructive.

### 5.2.2 The Specificity of Perfection

On the basis of clinical observations, Missildine (1963) claimed that perfectionism is limited to specific areas or activities. Consequently perfectionists are able to develop satisfaction from some areas of their life, while in other areas of their life, in spite of high achievement, they are eternally dissatisfied. From this theoretical framework striving to perform

perfectly in some areas, whether functional or not, is the fundamental goal of the perfectionist. Missildine (1963) argued that because perfectionism is limited to certain areas, many perfectionists are unaware of the negative impact of their perfectionism. According to Missildine (1963), the areas which perfectionism pervades are those which, as a child, were relevant to meeting the demands of parents. Examples of such areas include: cleanliness, academic orientation, table manners, athletic prowess, or body image. Missildine (1963) claimed that because perfectionists were not fully accepted during their childhood, they seek the approval of others through their perfectionism. According to Missildine (1963), in those areas where approval is sought, the perfectionism is measurable.\*

In a similar vein, Hollender (1965) claimed that although perfectionism tends to be a pervasive personality trait it may be particularly prominent in some areas of the perfectionist's life while not existing in other areas, and that the personality areas in which the perfectionism is most prominent are likely to reflect what has been of importance or unimportance to the perfectionist's parents.

### 5.2.3 Dysfunctional Versus Healthy Perfectionism

In research, perfectionism has traditionally been assumed to be a negative trait per se. This appears to be a reflection of the definition of perfectionism such research adopts. For example, (as outlined above) distinctions were made by Burns (1983) between "perfectionism" and "the healthy pursuit of excellence," by Missildine (1963) between "perfectionists" and "true masters of their craft," and by Hollender (1965) between "perfectionists" and those who "can be less precise when the occasion requires."

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\* Unfortunately, Missildine (1963) offers no explanation of how such perfectionism is measured.

Also on the basis of clinical experience, Hamachek (1978) adopted a broader definition of perfectionism than the traditional perspective. In doing so Hamachek argued that although typically regarded as a negative factor, perfectionism can be a *positive* quality in adjustment or achievement. Hamachek, in making a distinction between normal and neurotic perfectionism, claimed neurotic perfectionism to be a maladaptive trait. Normal perfectionists are "those who derive a very real sense of pleasure from the labors of a painstaking effort and *who feel free to be less precise as the situation permits*" (p. 27). In contrast, neurotic perfectionists also set high goals, but allow little room for error and consequently never feel that anything they do is adequately accomplished. This allows considerable room for 'failure'. It is this latter group who, according to Halgin and Leahy (1989) are perceived as having a 'cognitive style, which commonly masquerades as the admirable quality of "working hard in order to excel"' (p. 222).

This study adopts the view of Hamachek (1978), that perfectionism per se is not necessarily negative. However, rather than use the term "neurotic" to describe maladaptive perfectionism (as Hamachek did), this study uses the term "dysfunctional perfectionism".\* The recognition of perfectionism as being either healthy or dysfunctional is becoming gradually recognized in perfectionism research, especially since Hamachek's (1978) advocacy of this position.

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\* The term "dysfunctional" is considered to be less labelling and less outdated than the term "neurotic". However, in respect for the authors of previous studies, the terms used by them to describe dysfunctional perfectionism will be used when referring directly to their work.

#### 5.2.4 The Social Aspect of Perfectionism

As well as differentiating between dysfunctional and healthy perfectionism, differentiation can be made between dysfunctional perfectionism and compulsiveness. Hollender (1965) claimed that in clinical practice it is important to distinguish between perfectionism and compulsiveness, arguing that psychiatrists have sometimes confounded the two. According to Hollender (1965), although an admixture of compulsiveness and perfection can be found, perfectionism differs from compulsiveness in that compulsive behaviour tends to be stylized or ritualistic, whereas perfectionism does not involve repetition of a behaviour over and over. Perfectionism usually involves behaviour that is appropriate, but carried out in an extreme manner. "Instead of being ritualistic, it is goal-directed" (Hollender, 1965, p. 102). Whereas compulsive behaviour is intended to dispel unwanted feelings or impulses, the aim of perfectionistic behaviour is to seek commendation. "*Compulsiveness protects against disapproval; perfectionism reaches for approval*" (Hollender, 1965, p. 102). According to Hollender (1965), whereas compulsiveness has no social value, perfectionism tends to have a social value in that the perfectionist is seeking approval from significant others.

Hollender (1965) also differentiated the perfectionistic person from one who seeks narcissistic gratification as the perfectionist is one who "primarily seeks acceptance from other people" (p. 94). From the perspective argued by Hollender (1965), it seems that individuals who suffer from dysfunctional perfectionism may have reward-dependent temperaments.\* Socially oriented perfectionism (as outlined below) is also likely to be associated with such dysfunctional perfectionism.

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\* Reward dependence is a temperament dimension of the TPQ; see Method Chapter below.

### 5.3 HOW PERFECTIONISM IS MEASURED

Although several instruments have been developed to measure perfectionism, they are all relatively recent in comparison to much clinical speculation about perfectionism. Initial empirical measures of perfectionism were unidimensional, with multidimensional measures of perfectionism first appearing during the 1990s. Most, but not all, of these instruments are discussed below.

#### 5.3.1 Unidimensional Perfectionism Scales

##### The Burns Perfectionism Scale (Burns, 1980)

It was not until 1980 that the first scale emerged specifically for the measurement of perfectionism (the Burns Perfectionism Scale; Burns, 1980). However this scale, consisting of only ten questions, has not been widely used. The scant use of the Burns scale may in part be attributed to its brevity and to its lack of validity and reliability data.

Administering the Burns Perfectionism Scale, to male and female student volunteers, Pirot (1986) found a positive, but small, correlation between perfectionism and depression. Pirot concluded that perfectionism is only weakly associated with depression.

The only published study located in which the Burns Perfectionism Scale was administered to individuals suffering from eating disorders was that of Lenihan and Kirk (1990). This study of individuals suffering from anorexia and/or bulimia nervosa or compulsive overeating, as a group, compared pre and posttreatment levels of perfectionism. The posttreatment scores indicated perfectionism to have reduced significantly during treatment. No published studies were located that used the Burns Perfectionism Scale to

compare perfectionism in women with anorexia and/or bulimia nervosa with other groups of women.

Eating Disorder Inventory (EDI; Garner, Olmsted & Polivy, 1983)\*

Measurement of perfectionism in eating disordered groups first occurred with the development of the Eating Disorder Inventory (EDI; Garner, Olmsted & Polivy, 1983). Elevated scores on the Perfectionism subscale of the EDI, for women with anorexia and/or bulimia nervosa compared to healthy controls, have been reported from numerous studies. These differences have usually been significant (e.g., Garner et al., 1983; Garner, Garner & Van Egeren, 1992; Gross, Rosen, Leitenberg & Willmuth, 1986).

Setting Conditions for Anorexia Nervosa Scale (SCANS; Slade & Dewey, 1986)\*\*

Another instrument developed to measure perfectionism in women with eating disorders is the Setting Conditions for Anorexia Nervosa Scale (SCANS; Slade & Dewey, 1986). Based on Slade's (1982) model of the functional analysis of anorexia and bulimia nervosa, the SCANS is claimed to measure neurotic perfectionism according to scores, in conjunction, on its two subscales: Perfectionism and General Dissatisfaction. In using the SCANS to compare women with anorexia and/or bulimia nervosa with healthy women Slade, Dewey, Kiemle and Newton (1990) found that the SCANS identified 87 per cent of a sample of persons with eating disorders.

In developing the SCANS Slade and Dewey (1986) endeavoured to distinguish between normal and neurotic perfectionists.\*\*\* In doing so Slade and Dewey (1986) contributed towards an understanding of the

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\* Perfectionism is a subscale of the EDI-2; see Method Chapter below for a full description of the EDI-2.

\*\* See Method Chapter below for a full description of the SCANS.

\*\*\* Normal and neurotic perfectionists were initially termed 'satisfied' and 'dissatisfied' perfectionists by Slade and Dewey (1986).

multidimensional nature of perfectionism. However, the actual SCANS instrument has only one subscale, Perfectionism, pertaining specifically to perfection. The other subscale, General Dissatisfaction, appears to be more akin to depression (discussed below). Thus, although the SCANS appears to be a more refined measure of Perfectionism than preceding measures, it is arguably also a unidimensional perfectionism measure.

One reason that the SCANS does not assess the multidimensional nature of perfectionism is that it largely ignores the aetiology of perfectionism. The SCANS includes only one question pertaining to the family of potential respondents. Hence, further research examining the multidimensional nature of perfectionism in association with anorexia and bulimia nervosa is likely to assist our understanding as to which dimensions of perfectionism tend to be risk factors for these eating disorders. Such research would prove particularly valuable if family variables were included as this may allow some insight into the aetiology of dysfunctional perfectionism.

### 5.3.2 Multidimensional Perfectionism Scales

To remedy the lack of instruments measuring perfectionism multidimensionally two independent groups of researchers developed such a measure. While it appears that these are the first two measures of perfectionism developed which include perfectionism subscales, both are titled "Multidimensional Perfectionism Scale" (MPS). These are the Multidimensional Perfectionism Scale (MPS; Frost, Marten, Lahart & Rosenblate, 1990) and the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991).\*

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\* In order to differentiate between these two MPS measures the Hewitt and Flett (1991) MPS will be referred to henceforth (where appropriate) as the MPS(H).

Multidimensional Perfectionism Scale (MPS; Frost et al., 1990)\*

Frost et al.'s (1990) MPS appears to be the first instrument developed with subscales allowing for empirical testing of some of the collective views of clinicians regarding family interaction in the development of perfectionism.\*\* For such a purpose the MPS has two subscales specifically assessing perceptions of interaction with parents during the childhood of the respondent - Parental Expectations and Parental Criticism. In constructing the MPS dimensions of Parental Expectations and Parental Criticism, Frost et al. (1990) claimed that "most writers describe perfectionists as people who place considerable value on their parents' expectations and evaluations of them" (p. 451).

Frost et al. (1990) tested whether overall MPS Perfectionism, and each of its subscales, was related to a range of symptoms of psychopathology among 'normal' individuals (female undergraduate students). It was found that overall MPS Perfectionism correlated highly ( $p < .01$ ) with the Depressive Experiences Questionnaire (DEQ; Blatt, D'Afflitti & Quinlan, 1976) Self-Critical Depression subscale, and with 9 of 12 subscales of the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983) including Depression, Anxiety, and Obsessive Compulsiveness. In addition to correlating highly with overall MPS Perfectionism,\*\*\* the measures described correlated highly with the MPS Doubts about Actions subscale, and to a lesser extent with the Concern Over Mistakes subscale. Only one of the BSI scales (PSDI, i.e., intensity of symptoms) correlated with the MPS subscales of Parental Expectations and Parental Criticism, and none of the measures correlated

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\* See Method Chapter below for a full description of the Frost et al. (1990) MPS.

\*\* Although the EDI-2 has two questions pertaining specifically to perfectionism and family interaction, rather than comprising an independent subscale, these questions are incorporated in the Perfectionism subscale. No researcher appears to have published findings specifically for the two family interaction perfectionism questions. Frost et al. (1990) incorporated these two EDI questions in the MPS.

\*\*\* Overall MPS Perfectionism excludes the Organization subscale; see Method Chapter for a discussion.



highly with the remaining two MPS subscales of Personal Standards, and Organization. In fact, these two MPS subscales correlated with *positive* achievement and behaviour.

As a result of their research, Frost et al. (1990) claimed that, although perfectionism has some positive dimensions, people who are high in overall MPS Perfectionism have a greater frequency and variety of symptoms of psychopathology than those who are low in overall perfectionism. However, certain dimensions of perfectionism, on the MPS, are more highly associated with psychopathology than others. These are, Concern Over Mistakes, Parental Expectations, Parental Criticism, and Doubts about Actions. In examining these four dimensions, Frost et al. (1990) emphasized the existence of a significant association between perfectionism and family interaction.

#### Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991)\*

Like Frost et al.'s (1990) MPS, the MPS(H) provides considerable insight into interpersonal dimensions of perfectionism which are likely to provide some insight into associated familial factors. However, only one question, and *no* subscales, of the MPS(H) pertain specifically to interaction with parents.

The dimension of the MPS(H) most relevant to the theoretical underpinnings of this study is Socially Prescribed Perfectionism, the other dimensions being, Self-Oriented Perfectionism and Other-Oriented Perfectionism. Hewitt and Flett (1991) claimed that all three dimensions of perfectionism are fundamental components of an overall perfectionistic character. According to Hewitt and Flett (1991), "the primary difference

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\* Although the MPS(H) was not administered in this study (to avoid overloading respondents with similar questionnaires) numerous aspects of the MPS(H) are applicable to the theoretical underpinnings of this study, and thus noteworthy.

among these dimensions is not the behavior patterns per se, but the object to whom the perfectionist behaviour is directed ... or attributed" (p. 457).

Self-Oriented Perfectionism essentially includes self-directed perfectionist behaviour such as setting excessively high goals for oneself, and striving to reach these while also striving to avoid failure. With Self-Oriented Perfectionism a discrepancy tends to occur between the actual self and the ideal self. Numerous researchers have associated this discrepancy with depression.

The primary component of Other-Oriented Perfectionism is unrealistically high expectations of significant others, including stringent evaluation of their performance. Hewitt and Flett (1991) claimed that "other-oriented should" statements can be important determinants of interpersonal functioning' (p. 457).

Socially Prescribed Perfectionism is the perception of the need to meet the expectations of excessively high standards believed to be set for oneself by significant others. Those who have high levels of socially prescribed perfectionism feel pressure from significant others to meet their stringent criteria. Because these criteria can lead to a perceived inability to please significant others,\* according to Hewitt and Flett (1991), negative emotions should develop. Failure experiences and emotions such as anxiety and depression tend to occur in association with this. Hewitt and Flett (1991) claimed that "socially prescribed perfectionism is a feature of depression, but is not necessarily specific to depression" (p. 100).

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\* The perceived inability to please significant others indicates that Socially Prescribed Perfectionism is likely to be associated with low self-efficacy. Arguably, low self-efficacy is also likely to be associated with two dimensions of Frost et al.'s (1990) MPS: Concern over Mistakes and Doubts about Actions.

A point to consider in light of the association between socially prescribed perfectionism and failure experiences, is that it may be that socially prescribed perfectionists are not necessarily those highest achieving. Indeed, Burns (1980) argued that striving for perfectionism can block success. Failure experiences set the scene for self-belittlement, anxiety and lowered self-esteem. Striegel-Moore et al. (1986) addressed a similar issue of how striving for perfection in one area can block success in other areas. They argued that a woman's pursuit of the sociocultural ideal of beauty and thinness can be time and attention consuming, financially expensive, and damaging to her self-esteem, thus compromising her chances of success in other areas of life.

What Hewitt and Flett (1991) referred to as 'socially prescribed perfectionism', rather than limiting an understanding of perfectionism to that of actual high achievement, endeavours to examine perceptions of expectations of achievement by significant others. For, with socially prescribed perfectionism, the perceptions of family expectations are fundamental. Thus familial factors are likely to play a significant role in the aetiology of such perfectionism. Socially prescribed perfectionism appears to describe a similar construct to fundamental components of the superwomen complex proposed by Levine and Smolak (1992, outlined above) namely, perfectionism and the extreme need for external approval. Socially prescribed perfectionism also seems conceptually similar to Hollender's (1965) description of perfectionism (meaning, dysfunctional perfectionism: outlined above), as Hollender stressed the importance of the social aspect of perfectionism.

#### Overlap Between Two MPS Measures

According to Frost, Heimberg, Holt, Mattia and Neubauer (1993) both the Frost et al. (1990) MPS and the MPS(H) overlap considerably. In comparing

both instruments, Frost et al. (1993) found that the Frost et al. (1990) MPS Total perfectionism score appeared to reflect a global dimension of perfectionism which is correlated with Hewitt and Flett's (1991) Self-Orientated Perfectionism and Socially Prescribed Perfectionism scales, but less closely correlated with the Other-Oriented Perfectionism scale. Unlike Frost et al.'s (1990) MPS, the MPS(H) does not have a total perfectionism score. The Personal Standards scale of Frost et al.'s (1990) MPS was found to be most closely associated with the Self-Oriented Perfectionism scale of the MPS(H). The Concern over Mistakes, Parental Expectations and Parental Criticism scales of Frost et al.'s (1990) MPS correlated independently with the Socially Prescribed Perfectionism scale of the MPS(H). Consequently, the findings in this study, indicating which dimensions of Frost et al.'s (1990) MPS are most prominent in women with anorexia and/or bulimia nervosa, compared to healthy women, may provide us with some insight into which aspects of the MPS(H) are pertinent to eating disorders.

#### The MPS and Anorexia Nervosa

Only two published studies have related either version of the MPS to anorexia nervosa: Bastiani, Rao, Weltzin and Kaye (1995); Srinivasagam, Kaye, Plotnicov, Greeno, Weltzin and Rao (1995).<sup>\*</sup> No published study, to date, has administered either version of the MPS to a group of individuals suffering from bulimia nervosa.

Of note, in a recent study using the Frost et al. (1990) MPS, Minarik and Ahrens (1996) reported that eating disturbance was associated with the MPS subscales of Concern over Mistakes and Doubts about Actions, but not with Parental Expectations and Personal Standards. Participant groups in Minarik and Ahrens' (1996) research were female undergraduate psychology students (study one N = 39, and study two N = 56). Eating disturbance was

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<sup>\*</sup> Both of these studies, with three authors in common, were published following the gathering of data for this study.

assessed from responses on the EAT (Garner et al., 1982) and the first three subscales of the EDI (Garner et al., 1983). Considering that research using sound epidemiological methodology reported female lifetime prevalence rates for eating disorders (anorexia or bulimia) of 2.1% (Wells et al., 1989), with six months prevalence rates of 1.3% (Oakley-Browne et al., 1989), it seems likely that very few individuals in Minarik and Ahrens' (1996) study suffered from an eating disorder. As Welch and Hall (1990) found that 2.5% of a female student sample suffered from bulimia nervosa they argued that bulimia nervosa is more prevalent among tertiary education students than in the general population. Considering Welch and Hall's (1990) claims, the number of individuals with even a history of anorexia and/or bulimia nervosa in either of Minarik and Ahrens' (1996) studies is likely to have been approximately two. Although participants with eating disturbance would have exceeded this number, arguably there would be too few for sound empirical research. Thus Minarik and Ahrens' (1996) claims seem to lack a sound methodological basis. Arguably, in general, non clinical student samples are not suitable for valid eating disorder research.

Bastiani et al. (1995) administered both the Frost et al. (1990) MPS and the MPS(H) to women with anorexia nervosa (N=11), women 'with anorexia nervosa' recovered to a healthy body weight (N=8), and healthy women (N=10). For the MPS(H), Bastiani et al. (1995) found that both groups of women with anorexia nervosa scored higher than the healthy women for the subscales of Self-Oriented and Socially Prescribed Perfectionism, significantly so for the underweight women with anorexia nervosa. No significant differences were found on the Other-Oriented Perfectionism subscale. These findings are not surprising, as Frost et al. (1993) (outlined above) reported conceptual similarities between Self-Oriented and Socially Prescribed Perfectionism (but not Other-Oriented Perfectionism) and several Frost et al. (1990) MPS perfectionism scales.

For the Frost et al. (1990) MPS, Bastiani et al. (1995) found that both groups of women with anorexia nervosa scored higher than the healthy women for the subscales of Concern over Mistakes, Personal Standards, Parental Criticism, Doubts about Actions, Organization, and for the MPS Total Perfectionism score. For the underweight women with anorexia nervosa these differences were significant. Although no previous study had used the MPS for women with anorexia nervosa the significant differences found by Bastiani et al. (1995) reflect the claims of other researchers, both observational and empirical about perfectionism and about anorexia nervosa (outlined later in this chapter).

On the other hand, Bastiani et al.'s (1995) claims regarding Parental Expectations are somewhat confusing to the reader. Whereas, in the results section, Bastiani et al. (1995) claimed that ANOVA revealed significant differences between groups for several subscales, including Parental Expectations, they also claimed that there was *no* difference between groups for Parental Expectations. The table of results and discussion appears to confirm the latter of these claims to be correct, and the former claim as likely to be an uncorrected error. Indeed, Bastiani et al. (1995) argued that "anorexics experience their perfectionism as self-imposed, and not as a response to other's expectations" (p. 150). This finding is *not* what would be hypothesized on the basis of findings regarding high levels of social anxiety in women with anorexia nervosa (see Chapter Three above) and of the arguments of clinicians regarding high parental expectations in the development of perfectionism, and in the development of anorexia and/or bulimia nervosa (outlined later in this chapter).

A further problem with Bastiani et al.'s (1995) study is that the numbers of women in each group (ranging from 8 to 11; reported above) were marginal for applicable statistical analysis. Therefore the findings should be

interpreted with extreme caution. Clearly the study should be repeated with sufficient numbers in each group to allow for applicable statistical analysis.

In a more recent study using the Frost et al. (1990) MPS, Srinivasagam et al. (1995) compared 20 women who were at least 12 months recovered from anorexia nervosa with 16 healthy women. In spite of this study sharing three authors in common with Bastiani et al. (1995), a more stringent test of significance was used by Srinivasagam et al. (1995), that is, the Bonferroni-corrected significance level of 0.003. The women who had recovered from anorexia nervosa scored significantly higher than the healthy women on the MPS Total and two of the six subscales: Concern over Mistakes and Parental Criticism. Had Srinivasagam et al. (1995) assessed significant differences by a less conservative standard the differences between the recovered anorexia nervosa group and the comparison group would probably have been significant on all six MPS subscales.\* If so, this would corroborate the findings of Bastiani et al. (1995) on all MPS subscales except Parental Expectations.

Srinivasagam et al. (1995) also compared both groups of women on the EDI. Significant differences between groups were found for five of the eight subscales, including Perfectionism. The three EDI subscales that were not significantly different between groups were: Bulimia, Body Dissatisfaction, and Maturity Fears. Consequently, Srinivasagam et al. (1995) argued that "these data raise the possibility that perfectionistic behavior is independent of the state of the illness and reflects underlying traits" (p. 1633). If indeed dysfunctional perfectionism is a personality trait, this suggests that dysfunctional perfectionism may be a risk factor for anorexia nervosa.

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\* The p values for the four subscales not significantly different ranged from 0.02 to 0.009 Srinivasagam et al. (1995). Such extremely conservative criteria for null-hypothesis rejection leads to a strong possibility of Type 2 error.

Positive and Negative Perfectionism Questionnaire (Terry-Short, Owens, Slade & Dewey, 1995).

Recently, Terry-Short, Owens, Slade and Dewey (1995), using questions from several of the perfectionism instruments\* outlined above developed a 40-item measure of positive and negative perfectionism from the perspective that the perceived outcome of the perfection mirrors either positive or negative reinforcement. Terry-Short et al. (1995) argued that perfectionism which is a consequence of positive reinforcement or outcomes is likely to be more healthy than perfectionism which is a consequence of avoiding negative reinforcers or outcomes. The perfectionism questionnaire was administered to four groups of women defined according to eating disorders, depression, successful athletes, and a comparison group.

Regarding positive perfectionism, Terry-Short et al. (1995) found that the women athletes, followed by the women with eating disorders, scored highly compared to the women with depression and the women in the control group. As positive perfectionism tends to be healthy, it seems likely that positive perfectionism is conceptually similar to the Frost et al. (1990) MPS dimensions of Personal Standards and Organization, which Frost et al. (1990) claimed to be positive dimensions of perfectionism. For negative perfectionism, Terry-Short et al. (1995) found that the women with eating disorders and the depressed women scored higher than the women athletes and the women in the comparison group.

The perfectionism measure of Terry-Short et al. (1995) is likely to provide valuable insight into the nature of perfectionism in women with eating disorders, not only because it distinguishes between positive and negative

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\* The instruments accessed include two contributed to by co-developers of the Positive And Negative Perfectionism Questionnaire, the SCANS (Slade & Dewey, 1986) and the Neurotic Perfectionism Questionnaire (NPQ; Mitzman, Slade & Dewey, 1994). Other instruments accessed were the EDI (Garner et al., 1983), the Burns Perfectionism Scale (Burns, 1980), and the MPS (Hewitt & Flett, 1991).



perfectionism, but also in that it considers the influence of positive and negative reinforcement in the development of perfectionism. Moreover, it may be that the Terry-Short et al. (1995) perfectionism measure is able to provide further insight into the theoretical underpinnings of this study in that the distinction between positive and negative perfectionism is "derived from, and firmly rooted in, Learning Theory" (p. 668). However, the Positive and Negative Perfectionism Questionnaire was not considered for use in the current study as it was developed following the gathering of data.

## 5.4 A PERFECTIONISTIC PERSONALITY

### 5.4.1 Development of a Perfectionistic Personality

Familial influences have been claimed by various researchers to play a large part in the development of perfectionism (Barrow & Moore, 1983; Frost et al., 1990; Halgin & Leahy, 1989; Hollender, 1965; Root et al., 1986). Although, to date, the mechanism by which perfectionism is developed has been speculated on as a result of clinical observations (with the exception of Frost et al., 1990),\* because clinical researchers presented similar perspectives, this strengthens the validity of their claims.

Halgin and Leahy (1989) contended that: "Perfectionism is a multifaceted clinical problem that has developmental antecedents as well as current behavioral reinforcers" (p. 224). Hence, developmental issues are of considerable interest here, particularly with regard to familial factors, as the early development of cognitions is very much associated with family interactions.

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\* Frost et al. (1990), in addressing perfectionism from an empirical perspective, extended the arguments of clinical observational researchers regarding the aetiology of perfectionism.

From a clinical observational perspective, Hollender (1965) argued that "Like other personality traits, perfectionism is learned during childhood" (p. 97), a notion consistent with a social learning perspective. Although various factors contribute to the development of perfectionism Hollender claimed that sensitive children who feel very insecure are particularly prone to perfectionism, in which the insecurity intensifies the need for acceptance, creating an ongoing struggle to please one's parents. If the parent is difficult to please acceptance is considered to be conditional on performance, with rejection likely to occur when performance is less than perfect. According to Hollender (1965) a typical scenario while the child is struggling for approval is that "he [sic] may receive the message from his parents: 'You do not do things well enough. That's why I disapprove of you and dislike you'" (p. 97).<sup>\*</sup> Consequently the child strives even harder to attain improved performance.

Such rejection is likely to contribute to the child having low self-esteem, and to continue in the pursuit of excellence and acceptance. 'He [sic] continues trying so long as he has hope of pleasing his parents. Partial success, which fortifies the conviction that somehow the ultimate goal is within reach, spurs him [sic] onto renewed effort. He [sic] feels: "If I try a little harder, if I do a little better, if I become perfect, my parents will love me"' (Hollender, 1965, p. 98). This, claimed Hollender (1965), stunts the child's emotional growth. "He [sic] grows up to be a child-like adult needing a parental figure ... to direct much of his [sic] life" (Hollender, 1965, p. 99).<sup>\*\*</sup>

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<sup>\*</sup> The parental criticism of the child, referred to by Hollender (1965), seems conceptually similar to "Parental Criticism" measured as a dimension of the Frost et al. (1990) MPS; see Method Chapter below.

<sup>\*\*</sup> This seems conceptually similar to findings about women with anorexia and/or bulimia nervosa scoring highly on measures of Social Insecurity, Maturity Fears and Dependency (see Chapter Three above).

From his clinical observations, Missildine (1963) theorized that the perfectionist's unending efforts are driven by continual self-belittlement rather than a desire to master the environment. Through their ongoing efforts to please their parents, and consequently receive parental approval, children also need and seek the affection and approval of themselves. However, according to Missildine (1963), perfectionistic parents tend to defer approval of the child until the performance is at an extremely high level. Even then the child is urged to perform at an even higher level thus belittling any achievement that has been made. Consequently the child believes that s/he must do even better to gain the parental approval s/he desperately seeks. This creates an anxiety in the struggling child about him/herself and his/her abilities.

According to Hamachek's (1978) clinical observational perspective, neurotic perfectionism can develop in two types of emotional environments. One is "an environment of non-approval or, at best, inconsistent approval", where children are unable to learn how to please their parents (p. 28). The other is "environments of conditional positive approval" (Hamachek, 1978, p. 29), in which children learn that parental approval is conditional on certain high standards being met. This becomes dangerous when conditional positive approval greatly exceeds unconditional positive approval.

#### 5.4.2 The Effects of a Perfectionistic Personality

Hollender (1965) claimed that "With the passing of time, the need to please the parents becomes internalised and parental attitudes and requirements become part of the ego-ideal. The child has learned that perfectionism is the route to parental approval. No longer does someone else demand perfection; the person now demands it of himself [sic]" (p. 98). According to Hollender (1965), in their compelling motivation to please their parents,

perfectionistic children tend to become compliant and conforming, thus suppressing hostility and aggressive tendencies. Yet the child perceives that his/her "nice" external image is a facade.\* Consequently the child has difficulty accepting praise and "believes that anyone who praises him [sic] is uncritical, has been duped or is insincere." (Hollender, 1965, p. 99).

From their clinical observational perspective, Halgin and Leahy (1989) argued that by the time perfectionistic children reach adolescence their self concepts are extremely fragile. Consequently "they develop a compulsive pursuit to prove their worthiness and to repair their damaged self-esteem" (Halgin & Leahy, 1989, p. 223). They believe that if they can be perfect they will receive acceptance and love, not realizing the self destructiveness of their compulsive drive for perfection.

Similarly, Missildine (1963) claimed that perfectionists strive throughout their childhood to gain parental acceptance which is withheld because of ever present parental pressures to "do better" (p. 75). In combination, the independent claims of these clinical observational sources of speculation, provide a conceptualization of a perfectionistic child ever struggling for parental approval which is both infrequent and inconsistent.\* \*

From a social learning perspective, it seems that children suffering from dysfunctional perfectionism perceive themselves as behaving in response to the demands of the environment (perceived perfectionistic expectations of

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\* This notion of the external image as a facade seems similar to the clinical observations of theorists regarding women suffering from anorexia nervosa, and their families. For example, Bruch (1978) described families of women with anorexia nervosa as presenting a facade of well-being to significant others. According to Bruch, individuals with anorexia nervosa, while appearing competent outwardly, suffer a paralyzing underlying sense of ineffectiveness.

\* \* The clinical observations outlined here seem conceptually similar to the TPQ Reward Dependent temperament; see Method Chapter below. Arguably, Socially Prescribed Perfectionism is also being demonstrated; see "How Perfectionism is Measured" section.

significant others - usually the parents).<sup>\*</sup> Dysfunctional perfectionists believe that by behaving in this manner, significant others in their environment will reciprocate with the acceptance and love (positive reinforcement) they seek.

The struggle for the approval of significant others (argued to typify dysfunctional perfectionists) has also been claimed to typify women with eating disorders. For example, Levine and Smolak (1992), in outlining precipitating factors for eating disorders, referred to the 'superwoman complex'. This concept includes components of perfectionism and the extreme need for external approval. Levine and Smolak (1992) claimed that the superwoman judges her success against her perception of what significant others expect and think of her. This can render her extremely vulnerable to perceived loss of status in the eyes of significant others.

As individuals suffering from dysfunctional perfectionism perceive others as having high expectations of them (socially prescribed perfectionism)<sup>\*\*</sup> they compare themselves to excessively high standards or ideals (i.e., they have high personal standards).<sup>\*\*\*</sup> Heatherton and Baumeister (1991) used an 'escape model' to describe binge eaters with excessively high standards. According to the 'escape model', the higher the standards or ideals that one compares oneself against the greater the likelihood of failure. Heatherton and Baumeister (1991) argued that binge eaters compare themselves to excessively high standards (set either by themselves or perceived as expectations of significant others) which they have difficulty living up to. When binge eaters fail to meet these excessively high standards, they tend to

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<sup>\*</sup> Parental Expectations is a dimension of the Frost et al. (1990) MPS; see Method Chapter below.

<sup>\*\*</sup> Socially Prescribed Perfectionism is a dimension of the Hewitt and Flett (1991) MPS; outlined earlier.

<sup>\*\*\*</sup> Personal Standards is a dimension of the Frost et al. (1990) MPS, outlined earlier; see Method Chapter below for a description.

focus on their personal inadequacies and failings, making negative self-attributions. This is likely to evoke negative affect such as anxiety and/or depression. To escape from the negative self-awareness the individual may resort to cognitive narrowing, that is, concrete or low-level thinking. In this state inhibitions become removed and the individual is prone to irrational beliefs. It is in this disinhibited irrational state that for binge eaters their bingeing is likely to occur.

#### 5.4.3 How Dysfunctional Perfectionism Interacts with Other Aspects of the Person

Pacht (1984), argued that perfectionism (meaning, dysfunctional perfectionism) is associated with numerous disorders including anorexia nervosa, depression, obsessive compulsive disorder (OCD), and alcoholism.

#### The Association between Dysfunctional Perfectionism and Self-Esteem

Rosenthal (1993), in addressing women's body image concerns, emphasized that women should not feel a need to be perfect. Rosenthal (1993) claimed that when we have low self-esteem our lives are dominated by our fear. Consequently we have increased negative thoughts and lose our sense of over-all well-being and vitality. Also, we take fewer risks. Rosenthal further claimed that if self-worth is low it becomes difficult to perceive others as accepting you.

From a clinical observational perspective, Missildine (1963) argued that despite the high achievements of perfectionists they have low self-esteem and their self-confidence is lacking. Interpreting this low self-confidence from a social learning perspective it seems that low self-efficacy is characteristic of dysfunctional perfectionism.

Hollender (1965), theorizing from clinical insight, argued that low self-esteem is characteristic of perfectionists. According to Hollender (1965) a perfectionist typically remembers negative more so than positive issues. Consequently the perfectionist becomes more anxious, less confident, and, lacking in self-esteem. "Without a firmly-fixed, positive attitude toward himself [sic], he [sic] is continually dependent on his [sic] performance for feelings of acceptability, adequacy and goodness" (Hollender, 1965, p. 99). From a social learning perspective, Bandura (1986) argued that "it is mainly in areas affecting one's welfare and self-esteem that performance appraisals activate self-reactions" (p. 348).

The claims of Missildine (1963) and Hollender (1965), reinterpreted in a social learning perspective, demonstrate the reciprocal influences of the social environment, the cognitions and the behaviour on each other. It is speculated here that in the context described, that of continual dependency on others for approval, a perfectionistic person would be socially insecure and develop a reward-dependent temperament.\*

### The Association between Dysfunctional Perfectionism and Depression

It is difficult to ignore the construct of depression in comprehending the association between dysfunctional perfectionism and psychopathology. Considerable attention has been given to the relation between distorted thought processes, in particular the holding of highly unrealistic standards, and depression (Burns, 1980; Frost et al., 1990; Hewitt & Dyck, 1986; Hewitt & Flett, 1989; Hewitt et al., 1990; Pirot, 1986). Hewitt et al. (1990) claimed that such studies suggest that "personality traits, such as perfectionism, interact with environmental contingencies, such as failure experiences, to produce depression" (p. 68). Hewitt et al. (1990) further claimed that individuals suffering from neurotic perfectionism are highly susceptible to negative affective states such as anxiety and depression.

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\* 1. Social insecurity is a subscale of the EDI-2, and Reward Dependence is a temperament dimension of the TPQ; see Method Chapter below.

Hollender (1965) argued, regarding the perfectionist, that "from time to time, his [sic] demands on himself become too oppressive, and he [sic] loses hope. He [sic] then becomes moody or depressed" (p. 100). Similarly, from a social learning perspective, Bandura (1986) claimed that "stringent standards breed self-created stress and despondency" (p. 357). This argument is consistent with Rehm and associates' self-control model of depression (e.g., Fuchs & Rehm, 1977; Rehm, Fuchs, Roth, Kornblith, & Romano, 1979). Rehm's model claims that when overly stringent criteria are set for self-evaluation, low rates of self-reinforcement and high rates of self-punishment occur. This may lead to depression.

Indirect evidence for an association between dysfunctional perfectionism and depression in women with bulimia nervosa can be extrapolated from a study by Lacey (1982). Lacey (1982) found that women with bulimia tended to engage in "all or-nothing" thinking. This reflects the dichotomous thinking theorized by Beck (1976) to be one of six cognitive distortions of depression.\* This personality characteristic has also been associated with perfectionism. For example, Andersen et al. (1985) argued that "associated with the perfectionistic personality are an all-or-none kind of reasoning and the setting of unattainable goals" (p. 327).

Frost et al. (1990) (discussed above) found a positive correlation between MPS overall perfectionism and depression (.46). Although various negative cognitions may contribute to the onset of depression (Beck et al., 1974), the facet of dysfunctional perfectionism contributing most to the onset of depression is likely to be the doubt facet of perfectionism rather than high personal standards. Whereas clinicians have argued that due to doubt and worry perfectionists may become depressed, there appears to be no evidence to date that high personal standards alone contribute to depression. Indeed, extrapolation of data from Frost et al.'s (1990) study indicates that depression

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\* See Method Chapter below for an outline of Beck's (1976) cognitive model of depression.



is only weakly correlated with Personal Standards (.21) compared to the association between depression and Doubts about Actions (.55).

Considering the weak association between depression and MPS Personal Standards, it seems that individuals suffering from depression do not characteristically have high personal standards and thus do not characteristically suffer from dysfunctional perfectionism.\* On the other hand individuals with anorexia and/or bulimia nervosa have been observed by clinicians to have high personal standards (e.g., Bruch, 1978; Minuchin et al., 1978; Sours, 1979). Thus it is speculated here that, although individuals who suffer from depression *do not* characteristically suffer from dysfunctional perfectionism, individuals who suffer from anorexia and/or bulimia nervosa *do* characteristically suffer from dysfunctional perfectionism (i.e., high Doubts about Actions, Personal Standards, Concern over Mistakes, Parental Expectations, and Parental Criticism: the dimensions of Frost et al.'s MPS). This argument is consistent with the findings of Terry-Short et al. (1995; outlined above) using the Positive and Negative Perfectionism Questionnaire. Terry-Short et al. (1995) found that whereas an eating disordered group scored highly on both the positive and negative perfectionism measures, a depressed group only scored highly on negative perfectionism. In the current study it is speculated that dysfunctional perfectionism (as measured by the Frost et al., 1990 MPS) is conceptually similar to high scores on *both* the positive and negative perfectionism measures,\*\* particularly as Terry-Short et al. found that successful athletes scored highly only on positive perfectionism, and a control group did not score highly on either perfectionism measure.

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\* High personal standards, although characteristic of healthy perfectionism, are a salient feature of unhealthy perfectionism (Frost et al., 1990).

\*\* It was argued above that positive perfectionism, as assessed on the Positive and Negative Perfectionism Questionnaire seems conceptually similar to the Frost et al. (1990) MPS subscales of Personal Standards and Organization.

In addition to the relation between perfectionism and depression, Frost et al. (1990) found a positive correlation between MPS overall perfectionism and obsessive compulsiveness. However, similarly to the argument about depression, the association between MPS overall perfectionism and obsessive compulsiveness, was largely attributable to the association between Doubts about Actions and obsessive compulsiveness (.58). The association between Personal Standards and obsessive compulsiveness was low (.09). Thus it is speculated here that persons suffering from obsessive compulsiveness do not characteristically suffer from dysfunctional perfectionism.

On the basis of the argument outlined here, returning to the opening argument of this chapter, it is reiterated that dysfunctional perfectionism distinguishes psychopathology associated with anorexia and/or bulimia nervosa from numerous other forms of psychopathology, including depression and OCD. However, it seems that dysfunctional perfectionism also may be characteristic of high achieving individuals suffering from suicidal ideation (Farrell, 1989; Hewitt, Flett & Turnbull-Donovan, 1992). Hence dysfunctional perfectionism is not uniquely characteristic of individuals suffering from eating disorders.

### The Relationship between Dysfunctional Perfectionism and Suicide

As is the case with research on depression, much of the perfectionism literature is also interwoven with the suicide literature due to a strong relationship between these two behaviours. According to Hollender (1965) the depression which develops in individuals suffering from perfectionism can occasionally lead to suicide.\*

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\* Suicide is a major cause of death in women with anorexia nervosa. Sullivan (in press), reported a mortality rate of 5% per decade in sufferers of anorexia nervosa, with 27% of such deaths being from suicide; see Chapter One for an outline of this.

Gifted students have been widely reported as more vulnerable to suicide than their less gifted peers (e.g., Delisle, 1990; Farrell, 1989; Hayes & Sloat, 1989; Weisse, 1990). In all of these studies perfectionism was reported as an important factor associated with suicidal tendencies. Farrell (1989) found, in interview sessions, that gifted students conveyed numerous "interpersonal, intrapersonal, social and emotional difficulties" related to their giftedness (p. 134). These youngsters felt distressed by the high expectations of their parents and teachers, and suffered considerable guilt when these expectations were not met. Farrell (1989) claimed that an association existed between suicidal behaviour and worry about poor school performance. Further, "suicidal children feel deprived, unloved, and intensely ambivalent about their parents" (Farrell, 1989, p. 135).

Administering the MPS(H) to a group of psychiatric patients, Hewitt et al. (1992) found a significant correlation between suicide ideation and the MPS dimension of Socially Prescribed Perfectionism (i.e., the perception of the need to meet the expectations of excessively high standards set for oneself by significant others). From regression analysis Hewitt et al. (1992) found that Socially Prescribed Perfectionism predicted variance in suicidal ideation unaccounted for by depression and hopelessness scores obtained from other measures. However, Hewitt et al. (1992) did not find a significant association between suicide ideation and the MPS dimension of Self-Oriented Perfectionism (i.e., self-directed perfectionistic behaviour). This suggests that, as Self-Oriented Perfectionism is conceptually similar to high Personal Standards (a dimension of Frost et al.'s [1990] MPS), high Personal Standards may not be significantly associated with suicide ideation per se. Rather, high personal standards may be significantly associated with suicide ideation in individuals who perceive a need to meet an expectation of excessively high standards set for themselves by significant others.

## 5.5 THE ASSOCIATION BETWEEN DYSFUNCTIONAL PERFECTIONISM AND EATING DISORDERS

### 5.5.1 Parallels in Relationships of Dysfunctional Perfectionists and Women with Eating Disorders

#### Interpersonal/Intimate Relationships of Dysfunctional Perfectionists

As outlined above, perfectionism which exists to an unhealthy extreme, referred to by several researchers as neurotic perfectionism (e.g., Burns, 1980; Slade & Dewey, 1986; Sorotzkin, 1985), is referred to here as dysfunctional perfectionism. Neurotic (dysfunctional) perfectionists have been described as having a dichotomous (all or nothing) cognitive style (Sorotzkin, 1985). According to Burns (1980), because neurotic perfectionists fear and expect rejection when judged as 'imperfect', they are excessively defensive of potential criticism. This defensiveness can antagonize others, creating for the neurotic perfectionist the feared and anticipated disapproval. This reinforces the neurotic perfectionist's irrational beliefs that they will be rejected if they are less than perfect. Thus, Burns (1980) claimed that perfectionists are driven by fear.\* This usually allows no room for close and intimate relationships.

Missildine (1963) claimed that the greatest difficulty for perfectionists is usually in their intimate relationships with others.

Because the perfectionist is forever striving to achieve, ordinary social intercourse, the amiable enjoyment of companionship, the human need for closeness, the free flowing interchange of feelings are difficult for him [sic] to respond to. These relationships are based on acceptance of one's self and others. But his [sic] constant self-belittling corrodes this base (Missildine, 1963, p. 79).

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\* Fear of being judged as imperfect seems conceptually similar to Concern over Mistakes and Doubts about Actions dimensions of the Frost et al. (1990) MPS; see Method Chapter below.

Suppression of sexuality has been associated with perfectionism. According to Hollender (1965) perfectionistic children are so involved in succorance, that they avoid focusing on sexuality so that if sexuality surfaces to the extent that it threatens the parent-child relationship the perfectionist represses the sexuality or inhibits its expression.

According to Missildine's (1963) theoretical speculation (based on his clinical observations), perfectionism is often a barrier to successful sexual relationships. Driven by fear of failure and self-belittlement the perfectionist focuses on performance rather than the emotional aspect of the relationship. Consequently any failure results in self-belittlement, anxiety and lowered self-esteem. In some instances the fear of failure is so intense that sexual activity is avoided. Consequently Missildine's (1963) argued that perfectionists have difficulty in developing a relationship intimate enough to result in marriage. Missildine (1963) further argued that marriage can sometimes be perceived as an achievement by a perfectionist. However, once married the perfectionist usually has considerable difficulty developing intimacy and gaining pleasure from the relationship. This makes the perfectionistic spouse difficult to live with.

#### Interpersonal/Intimate Relationships of Women with Anorexia and/or Bulimia Nervosa

As is the case with dysfunctional perfectionists, difficulty in relationships with others,\* including intimate relationships, has also been reported in eating disorder research (e.g., Crisp & Bhat, 1982; Lacey, 1982; White & Boskind-White, 1981).

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\* See Chapter Three for a discussion of social relationships in women with eating disorders.

Numerous clinicians, in claiming intimate relationships to be particularly problematic for women with anorexia nervosa and/or bulimia, have found the repression of sexuality to be a major component of this (e.g., Crisp, 1980; Katzman, Weiss & Wolchik, 1986). Women with eating disorders have reported that their negative body image hindered their enjoyment of sexual activity as they avoided being observed or touched by their partners. Such women believe that their enjoyment of sexual activity would be enhanced if they were thinner or more attractive (Katzman et al., 1986). According to Katzman et al. (1986), the vicious cycle that can develop as a result of this is that lack of sexual satisfaction and a negative body image may lead some women to binge, thus substituting sex and love with food, and further increasing their negative body image. Crisp (1980) argued that anorexia nervosa develops as a maladaptive response in the avoidance of sexual concerns about which the person suffering from anorexia nervosa feels unable to cope.

A case study of a married woman suffering from anorexia nervosa revealed the negative effect of her dysfunctional perfectionism. Joanne [pseudonym] was so afraid of becoming fat she believed that if she ate even a slight quantity of a high calorie food her body would appear so repulsively overweight to her husband that he would not want to have a sexual relationship with her. Any deviation from her strict diet was perceived by Joanne to be a failure. This resulted in anxiety and self-belittlement. Believing this myth, Joanne became increasingly alienated from her husband until eventually the marriage relationship broke down (personal interview, November, 1993).

The sexual difficulties in intimate relationships in women with anorexia and/or bulimia nervosa is consistent with Barlow's model of sexual anxiety (e.g., Barlow, 1986). According to Barlow (1986), anxiety plays a role in sexual

dysfunction in that attention may be inappropriately focused on the consequences of not performing, or on other issues, not directly related to erotic cues. This notion is also consistent with Baumeister and associates' model of self-focussed attention (e.g., Heatherton & Baumeister, 1991, discussed above). Assuming women with anorexia and/or bulimia nervosa have heightened self-focussed attention, rather than anxiety and stress activating problem-solving responses, inappropriate self-focussed attention occurs about how dreadful the situation will be (e.g., believing one's husband will perceive one's body as too fat for an intimate relationship).

The above section has outlined several characteristics common to the cognitions and behaviours of dysfunctional perfectionists and those with anorexia and/or bulimia nervosa. These parallel claims of researchers leads to the question of whether it is the dysfunctional perfectionism more so than the eating disorder per se which hinders the interpersonal/intimate relationships of women with eating disorders.

### 5.5.2 Dysfunctional Perfectionism in Women with Eating Disorders

In an empirical study of adolescent girls' perceptions of the ideal woman and their personal goals for themselves, Steiner-Adair (1986) found that all girls had a similar image of the ideal woman, the key elements being, career, family and beauty - the 'superwoman' ideal. However, in comparing the personal goals of subjects with their scores on the Eating Attitudes Test (EAT; Garner & Garfinkel, 1979), a measure of disordered eating, Steiner-Adair (1986) found that those girls who had internalized the superwoman ideal into their personal goals, had higher eating pathology scores than those girls who had less ambitious personal goals.

High levels of perfectionism have been found to typify women with anorexia and/or bulimia nervosa (e.g., Garner, Olmsted & Polivy, 1983; Thompson, Berg & Shatford, 1987). Numerous such studies have measured perfectionism as a subscale of the EDI (outlined above). Other studies associating perfectionism with eating disorders have been based on clinical observations (e.g., Minuchin et al., 1978; Root et al., 1986: outlined above).

Several clinicians have noted that women who develop anorexia nervosa are typically considered by their parents to have been 'good girls', 'perfect' and 'obedient' as children, and high achievers (e.g., Andersen, Morse & Santmyer, 1985; Bruch, 1973). On the basis of her clinical observations, Bruch (1973) described the typical struggle of persons with anorexia nervosa to live up to perfectionist or unrealistic standards of performance. Andersen et al. (1985) claimed, of individuals suffering from anorexia nervosa, that "many (but not all) patients prior to illness have perfectionistic, self-critical, and obsessional traits.... They have been praised as model children by families for their compliant behavior and their attainment of good grades in school" (p. 327).

The clinical observation of high academic achievement by many individuals with anorexia nervosa was empirically tested in a study of the differences between IQ and school achievement in adolescent females suffering from anorexia nervosa (Dura & Bornstein, 1989). It was found that the school achievements of females with anorexia nervosa (in reading and spelling tests) was significantly greater than would be predicted from IQ scores. However, Dura and Bornstein's findings should be interpreted with caution, as the study did not include a control group, and, to date, does not appear to have been replicated.



Although most clinical observations of dysfunctional perfectionism in women with eating disorders have pertained to women with anorexia nervosa, some clinicians have noted perfectionism in women with bulimia. In describing women with bulimia, White and Boskind-White (1981) claimed that they are in a "struggle to achieve a perfect, stereotypic female image" (p. 501). Striegel-Moore et al. (1986), in addressing this perfect stereotypic female image, claimed women are at increased risk for bulimia if they have accepted and deeply internalized such an image. Thus, the more a woman rejects fatness as "bad" and accepts thinness as "beautiful" and "good", the more she will struggle to achieve thinness, and be distressed about fatness.

As claims regarding dysfunctional perfectionism in women with eating disorders have pertained more to anorexia nervosa than to bulimia nervosa, it may be that perfectionism is less common in women with bulimia nervosa than those with anorexia nervosa. Thus it may be that women with bulimia nervosa are a more heterogeneous population, especially in relation to perfectionism, than women with anorexia nervosa. Indeed, Root et al. (1986) (outlined above), from their clinical observations, described the 'perfect family' as one of *three* characteristic types of women suffering from bulimia, although some overlap exists in these family types. Further, Slade and Dewey's (1986) SCANS was based on a model predicting high perfectionism in women with anorexia nervosa and one form of bulimia (i.e., bulimia preceded by anorexia nervosa).

### Asceticism in Women with Eating Disorders

Associated with perfectionism is asceticism, as the self-denial and self-discipline aspects of asceticism are fundamental characteristics of

perfectionism.\* Only through self-denial and self-discipline are those suffering from dysfunctional perfectionism able to pursue their goals to an unhealthy extreme. Garner et al. (1991) found women with anorexia nervosa, and women with bulimia nervosa, scored significantly higher than healthy women controls on EDI-2 Asceticism.

### Dysfunctional Perfectionism and High Need for Approval in Women with Eating Disorders

A high need for approval from significant others by women with anorexia nervosa has been claimed by several researchers. For example, Guidano and Liotti (1983) speculated that the irrational beliefs characteristic of persons with anorexia nervosa are related to a "dire need to be loved" and "the absolute unbearability of disappointment". Friedlander and Siegel (1990) argued that women with anorexia nervosa rely on others for a sense of self-worth. Consequently they are likely to strive to please others, and in doing so develop perfectionist tendencies.

This strong need for approval from others has also been found in women suffering from bulimia nervosa, as a result of clinical observations and of sound empirical studies (e.g., Dunn & Ondercin, 1981; Katzman & Wolchik, 1984; Kendler et al., 1991). For example, Katzman and Wolchik (1984) found that women with bulimia indicated higher self-expectations and a higher need for approval than healthy controls. Kendler et al.'s (1991) claims were from a large empirical population-based twin study. It may be that this high need for approval, characteristic of women with anorexia and/or bulimia

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\* Asceticism refers to the extent to which one believes in the denial of self pleasures, and the perceived ability to control this denial. Self-discipline, self-restraint and self-sacrifice are spiritual ideals through which virtue is sought. Asceticism is measured in this study as a subscale of the EDI-2. It is one of three subscales recently added to the EDI; see Method Chapter below.

nervosa, is a reflection of socially prescribed perfectionism (outlined above) and of a reward-dependent temperament.\*

In an autobiography of her history of anorexia nervosa, O'Neill (1982) partially attributed her desperate desire to attain parental approval to their disappointment that she was a daughter rather than a son. Similar attributions have been made in theorizing about dysfunctional perfectionists. Hollender (1965) cited a case study of a woman who struggled to be perfect following the early abandonment of her family by the father, and the mother's claims that she was an unwanted child. Hollender (1965) explained that when asked why she thought she was so perfectionistic the patient replied:

I think it goes back to wanting to be accepted - wanting to be liked. I think that basically that is what it is - not wanting to have anyone find fault with me - not giving them any reason to find fault with me. I just never seemed to be good enough no matter what I did.... I think it started out with the desire to please my mother (p. 101).

The common thread in the examples outlined here is arguably the daughter's intense insecurity within the family, her perception of being a disappointment to her parents, and a subsequent struggle to overcome this and achieve acceptance and approval. The important issue here is the *perception* of the daughter even though this may differ from actuality.

It is speculated that there are numerous other reasons why a child may feel insecure, and consequently compete for acceptance and approval, such as being sent to boarding school and/or parental attention being directed

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\* Reward Dependence is a temperament dimension of the TPQ; see Method Chapter below.

elsewhere.\* Redirection of parental attention is likely to be a factor in sibling rivalry.

### Dysfunctional Perfectionism and Sibling Rivalry in Women with Eating Disorders

Sibling rivalry has been cited as a potential contributing factor to development of dysfunctional perfectionism. Hollender (1965) cited an example of the "middle-child problem" struggling for a share of parental approval. In doing so the child may also become compliant and conforming - the 'good child'. Sibling rivalry has also been claimed as a family factor associated with eating disorders (outlined above).

An extract from the diary of a woman suffering from anorexia nervosa, whose sister has become the focus of her parents' affection, demonstrates the typical perfectionist strivings for parental attention. "All I've ever accomplished, my brilliant school record, carries less weight than the whims of that featherhead [sister]. Believe it or not, the only thing that really works is refusing to eat!" (cited in Selvini-Palazzoli & Viaro, 1988, p. 138). This extract also demonstrates the coercion the daughter with anorexia nervosa is using to regain her parents' attention, and that her parents are positively reinforcing this coercive behaviour.

In their empirically based study, comparing parents of women with bulimia with parents of healthy women, Sights and Richards (1984) found that the parents of women with bulimia were more likely than the parents of healthy women to compare siblings openly. From this perspective, combined with the high parental expectations of women with bulimia (outlined below), Sights and Richards (1984) argued that "it is not surprising

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\* Selvini-Palazzoli and Viaro (1988) (outlined above), described individuals who develop anorexia nervosa as competing for approval when parental attention becomes directed at another sibling.

to find evidence of stronger sibling rivalry, particularly between sisters, in families of bulimics" (p. 11).

### Dysfunctional Perfectionism and Fear of Rejection in Women with Eating Disorders

Associated with competing for approval is a fear of rejection. In outlining the therapeutic relationship between patients with anorexia and their therapists, Garner and Garfinkel (1985) emphasized the typical fear of rejection by patients with anorexia nervosa. Garner and Garfinkel (1985) cited specific examples of characteristic patient claims, including: "'How could you accept me knowing that I failed?', and, 'I expect you to reject me because you can see my bad qualities'" (p. 111). Such distortions were considered by Garner and Garfinkel (1985) to represent "patterns of expectations" in need of correction (p. 111).

The fear of rejection by patients suffering from eating disorders (outlined by Garner & Garfinkel, 1985) demonstrates the fear of individuals suffering from eating disorders of not being accepted by significant others. Hollender (1965) (outlined above), made a similar claim of individuals suffering from dysfunctional perfectionism in describing perfectionists as primarily seeking acceptance from other people.

The similarities in the social fears of individuals with eating disorders and individuals suffering from dysfunctional perfectionism may contribute to an understanding of why high levels of social anxiety are characteristic of women with eating disorders (see Individual Factors Section above). Parallels in the inadequacy of social skills in dysfunctional perfectionists, and in women with anorexia and/or bulimia nervosa, have been outlined. Researchers have associated social skills inadequacy with parental influences (e.g., Peterson & Leigh, 1990).

## 5.6 PARENTAL INFLUENCES ASSOCIATED WITH DYSFUNCTIONAL PERFECTIONISM IN THE DEVELOPMENT OF EATING DISORDERS

### 5.6.1 Perfectionism in Family: General

From a social learning perspective the acquisition of perfectionistic behaviour is originally influenced by external events. For example, through observing perfectionistic behaviour patterns and their consequences in other people (real-life models, such as parents) a child may imitate such behaviour (e.g., Bandura & Walters, 1963). Thus children may learn behaviours from parents' unintentional modelling. Peterson and Leigh (1990) claimed that when a child models parental behaviour this process is filtered through the child's repertoire of social and personality characteristics, and is essentially derived from the child's prior cumulative life experiences. In time verbally or pictorially presented symbolic models involving perfectionism may be more heavily relied on than real-life models.

Perfectionistic tendencies identified in individuals suffering from anorexia and/or bulimia nervosa have been claimed to exist in their families, although much of this work relies on clinical impression rather than rigorous empirical investigation (e.g., Minuchin et al., 1978). Families of individuals with anorexia nervosa have been observed by clinicians to place a greater emphasis on achievement than families of healthy controls, with a successful and closely knit family typically being considered desirable (e.g., Bruch, 1973; Luby & Weiss, 1984).

Perfectionism has also been observed in families of women with bulimia. For example, Root et al. (1986) argued that perfectionistic tendencies are more characteristic of families of women suffering from bulimia than of

families in the general population. As outlined above, Root et al. (1986) described one of three characteristic types of families of patients with bulimia as the 'perfect family'.\*

### 5.6.2 Perfectionism about Physical Appearance

Perfectionist tendencies in families of individuals with anorexia nervosa have also been found regarding physical appearance. As a result of her clinical observations, Bruch (1973) claimed that fathers of individuals suffering from anorexia nervosa were very preoccupied with physical appearance and proper behaviour in themselves and their offspring, more so than parents in the general population. Such perfectionistic parental attitudes towards physical appearance, including body shape, have been claimed to act as a precipitating factor for an eating disorder (Bruch, 1973; Chadda et al., 1987). Parents of women suffering from anorexia nervosa have also been described as having a "fear of aging ... and an undue emphasis on a youthful appearance" (Garner & Garfinkel, 1982, p. 176).

A strong emphasis on physical appearance by family members has also been observed by clinicians in families of individuals suffering from bulimia (e.g., Schwartz et al., 1985). Striegel-Moore et al. (1986) speculated that a daughter is at relatively increased risk for bulimia

if the family places heavy emphasis on appearance and thinness; if the family believes and promotes the myth that weight is under volitional control and thus holds the daughter responsible for regulating it; if family members, particularly females (mothers, sisters, aunts), model weight preoccupation and dieting; if the daughter is evaluated critically by members of the family with regard to her weight; if the daughter is reinforced for her efforts to lose weight; and if family members compete regarding the achievement of the ideal of thinness (p. 256).

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\* Root et al.'s (1986) perspective, based primarily on clinical observations, is outlined at length above; see Family Studies Chapter.

In developing these ideas further, Striegel-Moore and Kearney-Cooke (1994), explored the attitudes and behaviours of parents in the general population about their children's physical appearance. A survey was used to question parents of children aged between 2 and 16 years about their children's physical attractiveness, eating habits and exercise behaviour, and about what they had done to alter their children's appearance. Although it was found that both fathers and mothers (as independent groups) were basically satisfied with their children's physical appearance, increasingly less satisfaction was reported with the increasing age of the children.

Striegel-Moore and Kearney-Cooke (1994) also assessed parental perceptions of their children's weights. These perceptions were rated "along a continuum ranging from 'too skinny' to 'definitely overweight'" (Striegel-Moore & Kearney-Cooke, 1994, p. 380). It was found that younger children were rated by their parents as significantly less overweight than older children. Differences in perceived weight also applied across genders for the adolescent age group with adolescent girls rated by their parents as significantly more overweight than adolescent boys. Adolescents generally received significantly less parental praise and significantly more parental criticism about their appearance than younger children. Although parents who criticized their children's physical appearance were in the minority such parents were probably not aware of the high sensitivity to body image and often low self-esteem of adolescents during this major transition period of psychological adjustment and search for identity, paralleled with a rapidly changing physical body.

### 5.6.3 Perfect Family Image

Based on clinical observations, researchers have argued that families of women suffering from anorexia nervosa characteristically mask their



relationship difficulties with a facade of family solidarity and smooth functioning (e.g., Bruch, 1978; Crisp, 1980; Minuchin et al., 1978; Sargent, Liebman & Silver, 1985). Bruch (1978) described families of people suffering from anorexia nervosa as displaying a flawless, perfectionistic family image to the rest of the world.

In a case study of a girl suffering from anorexia nervosa, Luby and Weiss (1984) described the family as enmeshed and yet "also characterized by a need to appear harmonious and tranquil (p. 88)." The family valued an image of a "successful and closely knit family" (p. 88).

Although studies claiming a facade of well functioning in families of women suffering from eating disorders have primarily described families of women suffering from anorexia nervosa some researchers have made similar claims of families of women suffering from bulimia nervosa. For example, Sights and Richards (1984) argued that "bulimic families are likely to be sensitive to public opinion and tend to give the most socially desirable answers to some questions" (p. 12).

#### **5.6.4 Parental Self-Esteem and Perfectionism**

The perfect family image claimed to be characteristic of families of individuals with anorexia and/or bulimia nervosa may reflect a need for parental self-esteem being achieved through the image of the family. Some researchers contend that parental self-esteem is associated with self esteem in their offspring. Thus when a parent's self-esteem is contingent on their child's success, the parent becomes overly anxious when their child "fails", perceiving this as a negative reflection on themselves. Consequently, parental approval of the child becomes dependent upon a perfect performance by the child (e.g., Barrow & Moore, 1983; Burns, 1980).

The few studies of parental self-esteem in women with eating disorders have been based on clinical observations, and of families of women with anorexia nervosa (Bruch, 1973; Sours, 1974; Vath, 1982). As a result of clinical observations, Vath (1982) claimed that in families of women with anorexia nervosa there is an interdependency whereby the parents perceive a need for perfection. "They attempt to control the patient into being a perfect child who makes them feel like perfect parents" (Vath, 1982, p. 185). According to Vath (1982) such parents often use the child's successes to seek validation and gratification in areas in which they as parents feel insecure and inadequate. When this occurs the parents have difficulty allowing the child to develop autonomy. Vath (1982) further argued that, from the child's perspective, having been dominated by parents, self-confidence is low. Consequently the child perceives his/her family ambivalently. Although the child wants to break away from his/her parents, s/he is afraid to do so.

Similarly, from a clinical observational perspective, Bruch (1973) claimed that families of patients with anorexia nervosa rely heavily on external standards for regulating self-esteem and success. Sours (1974) speculated, from clinical observations, that a daughter who develops anorexia nervosa is controlled by her parents so as to fulfil their personal aspirations. The mother lives through the child's achievements to counter her own failures and disappointments, such as in her marriage or career.

Claims of living through their child's achievements have also been made of mothers of women with bulimia. In their controlled study, Sights and Richards (1984) found that "mothers of the bulimics were more inclined to characterize their daughters as 'model children,' children who would fulfil their own unrealized personal ambitions" (p. 11).

### 5.6.5 High Parental Expectations

Parental Expectations, a dimension of Frost et al.'s (1990) MPS,\* is another important component associated with the development of anorexia and/or bulimia nervosa. Case studies in patients with eating disorders have emphasized their perceptions of high parental expectations. In their case study of a woman suffering from anorexia nervosa, Luby and Weiss (1984) emphasized the patient's perceptions of suffering excessive expectations and little positive comments from her father. "She felt that somehow her weight loss was tied to a compelling perfectionistic need on her part which she related to her father's excessive demands for academic achievement and success in athletics" (p. 87). Further, the patient's mother was described by the authors as highly controlling and intrusive.

From a psychoanalyst's perspective, Vath (1982) reported that the parents of women with anorexia nervosa tend to have excessively high expectations of their daughters, thus fostering insecurity and a striving for perfectionism in these daughters.

The first issue I usually deal with in my patients is perfectionism. The anorectic maintains ideals and behavioral goals that are absolutely above reproach in order to avoid punishment or rejection. This is frequently a frantic striving to achieve, motivated by underlying guilt and remorse for failing to live up to expectations (Vath, 1982, p. 184).

From her clinical observational perspective, Bruch (1985) claimed of women with anorexia nervosa that "underneath this self-assertive facade they experience themselves as acting only in response to demands coming from others, and not doing anything because they want to" (p. 10).

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\* See Method Chapter below for a description of MPS Parental Expectations.

With regard to women with bulimia, Squire (1981) claimed that they tend to perceive themselves as failures unable to live up to the expectations of their parents. Similarly, in his book *Anorexia and Bulimia: Anatomy of a Social Epidemic*, Gordon (1990) argued, from a clinical perspective, that “bulimics tend to have an intensely ambivalent relationship with their fathers. Often the father has been admired as a role model, and has set high standards of intellectual or professional achievement for his daughter” (p. 61).

To date there appears to be scant empirical evidence of high parental expectations of women with anorexia and/or bulimia nervosa. However, Sights and Richards (1984) compared mothers and fathers (both independently and jointly) of women with bulimia with mothers and fathers of healthy women. It was found that the parents of women with bulimia were more demanding and “placed particular emphasis on achievement and success” (p. 11). Although parental expectations of daughters with bulimia were higher than of healthy daughters, these differences reached significance for the mothers, but not the fathers.

In a study of eating disorders among adolescents Kagan and Squires (1984) found that “the most important affective variable for identifying adolescents with disordered eating habits was the feeling that one had failed to meet one’s own expectations and the expectations of others” (p. 24). Although this finding does not pertain specifically to parental expectations, such expectations are likely to be very relevant.

#### 5.6.6 High Parental Criticism

Parental Criticism, another dimension of Frost et al.’s (1990) MPS,<sup>\*</sup> is not only associated with perfectionism but also with the development of eating

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<sup>\*</sup> See Method Chapter below for a description of MPS Parental Criticism.

disorders. Gordon (1990) argued, from his clinical insight, that although women with bulimia nervosa often admire their fathers as role models, "typically, though, the father has been extraordinarily critical, and in some instances overtly abusive" (p. 61).

Parental criticism in relation to daughters' physical appearance was addressed by Pike and Rodin (1991) in an empirical study of mothers, daughters and disordered eating. Using the disordered eating index (defined above) Pike and Rodin (1991) found that mothers of eating disordered daughters were more critical of such daughters' weight and appearance than they were of their own. Pike and Rodin (1991) claimed that "mothers of daughters with disordered eating may express these attitudes by placing direct pressure on their daughters to be thin" (p. 203). Even after controlling for weight differences,\* it was found that mothers of daughters with disordered eating thought that their daughters should lose more weight than the comparison mothers thought their daughters should lose.

The findings of Striegel-Moore and Kearney-Cooke's (1994) empirical study (outlined above) demonstrate that age and gender factors are also associated with parental criticism towards offspring's physical appearance. In summary, Striegel-Moore and Kearney-Cooke (1994) found significantly less parental praise and significantly more parental criticism of adolescents' physical appearance (including weight) than of younger offspring. These criticisms were significantly greater of females than males.

As outlined above, clinicians have speculated that the areas in which perfectionism tends to be most prominent are those which, as a child, were

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\* Although the girls with disordered-eating weighed more (mean BMI = 22.86) than the healthy girls (mean BMI = 20.65), ANCOVA indicated that the mothers' attitudes to their daughters' weights was not due solely to the actual weight differences between the girls.

relevant to meeting the demands of parents (Hollender, 1965; Missildine, 1963). Examining this argument in light of the findings of Striegel-Moore and Kearney-Cooke (1994), it may be that the areas of importance to parents associated with the development of perfectionism, vary according to the age and gender of the offspring. Hence the offspring's areas of perfectionism may vary according to what is positively reinforced by their parents.

Parental criticism has been found to be the primary component of expressed emotion (Szmukler, Eisler, Russell & Dare, 1985).<sup>\*</sup> From a study of EE in

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\* Expressed emotion (EE) was traditionally assessed using the Camberwell Family Interview (CFI) (Brown & Rutter, 1966; Rutter & Brown, 1966) to predict relapse in individuals suffering from schizophrenia. This involved a semi-structured interview of the target family member (usually a parent) with the psychiatric patient being absent. The CFI specifically measures the number of critical comments and the level of emotional overinvolvement spontaneously expressed by the key relative of a psychiatric patient toward the psychiatric patient during the interview. The relative is classified as high EE if the number of criticisms expressed toward the patient and/or the emotional overinvolvement with the patient are above a specified level. As administering and rating EE using the CFI is an arduous task the Five-Minute Speech Sample was developed as an alternative measurement of EE (FMSS; Magana, Goldstein, Karno, Miklowitz, Jenkins & Falloon, 1985). The brief FMSS speech sampling method differs from the more lengthy CFI method, in that it focuses on the respondent's attitudes towards their psychiatrically ill relative, whereas the CFI focuses on a personal or dramatic life event experienced by the respondent (Wynne, 1981). The primary component of EE is the number of "critical comments" expressed by the key relative (Szmukler et al., 1985). Little is known about the relationship between psychiatric patients' perceived criticism of themselves by family members, and the level of EE in such family members. Hooley and Teasdale (1989) claimed to have conducted the first study "to obtain data directly from patients themselves concerning their perceptions of criticism from family members" (p. 230). This study of depressed patients and their spouses used the CFI to assess EE. Hooley and Teasdale found that asking the patient the question "How critical is your spouse of you?" was a better predictor of relapse than was the level of EE in the spouse. Thus patient's perceptions of criticism from spouses seems to be an important predictor of relapse. On the basis of the "critical comments" expressed by a key relative of the patient being the primary construct of EE, it seems reasonable to suggest that EE (when assessed in a parent regarding a child) and the Multidimensional Perfectionism Scale (MPS; Frost et al., 1990) are tapping an important common dimension - that of "parental criticism". However, a fundamental difference between "parental criticism" assessed by the MPS and by EE measures, is that MPS measures respondents' perceptions of parental criticism, and EE assesses parental criticism directly. Thus, the former is subjective whereas the latter is objective. While this would seem to indicate EE to be a more reliable measure of parental criticism than the Parental Criticism of the MPS, a major problem with the measurement of EE is that it is not static over time (Goldstein, Miklowitz, Strachan, Doane, Nuechterlein, & Feingold, 1989). Thus assessing critical comments during a specific time-frame may not be a reliable measure of parental criticism generally towards the child. Based on Hooley and Teasdale's (1989) findings it is speculated here that the MPS provides a more stable measure of parental criticism than does EE: see Method Chapter below for a full description of the MPS.

the parents of children suffering from depression Asarnow, Goldstein, Thompson and Guthrie, (1993) argued that "depressed children who are prone to perceive themselves negatively ... might be hypothesized to be particularly sensitive to criticism in the home which might further reinforce their own tendencies towards self-criticism" (p. 135). It is speculated here that high sensitivity to criticism is not only likely for depressed children but for any children who are prone to perceive themselves negatively, including those suffering from dysfunctional perfectionism.

Asarnow et al. (1993) further argued that the irritability and negative behaviours of depressed children, when interacting with their parents, may increase the likelihood of critical comments towards the child from the parents. From a social learning perspective, Asarnow et al.'s (1993) argument demonstrates how the child's behaviour is shaping the parents' behaviour and the parents' behaviour is shaping the child's behaviour. A child may evoke high levels of parental criticism, and high levels of criticism from the parents is likely to evoke increased negativity in the child. Thus, the cognitions, the behaviour, and the environment, are strong reciprocal determinants of each other.

## 5.7 WHY DO EATING DISORDERS DEVELOP?

An important question which arises in light of the issues outlined thus far, is why an eating disorder develops rather than another disorder, or no disorder at all. Levine and Smolak (1992) claimed that, in the absence of the slender ideal and the superwoman complex, fundamental components of which are perfectionism and extreme need for external approval, the combination of being overweight and achievement threats would perpetuate a different disorder to anorexia and/or bulimia nervosa (e.g.,

depression). This study questions whether the combination of being overweight and experiencing achievement threats is sufficient to perpetuate any psychological disorder at all. It is speculated here that dysfunctional perfectionism and the extreme need for external approval comprise the underlying personality disturbance contributing to the development of an eating disorder.

On the other hand, not all dysfunctional perfectionists develop eating disorders. Head and Williamson (1990) suspect that a dysfunctional family environment is associated with general neurotic characteristics and personality disturbances, but a more specific learning history, such as adolescent obesity, being teased about being overweight, etc., to be associated with the onset of eating disorders. Being teased about being overweight may reduce an individual's self-esteem and trigger off a diet intended to restore self-esteem. This example indicates the importance of situational factors as dieting triggers. Indeed, Rosenthal (1993) in addressing women's body image concerns, claimed self-esteem to be situational. Thus if one becomes rejected by a significant person in one's life, this creates fear. For example, "You are afraid your boyfriend won't want you if he discovers you're not perfect".

Although it is assumed in this study that the initial diet may be triggered off by one or more of many factors, such as being ridiculed about excessive weight,\* the Western society social-cultural emphasis on slimness in females etc., it is theorized that the personality disturbance exists prior to the onset of that episode of dieting which develops into an eating disorder. Thus, this study adopts the view of researchers (e.g., Slade, 1982) who claimed that the eating problem is not the primary disorder, but rather a by-product of a more general set of psychological problems.

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\* It is speculated that most women who diet are ridiculed at some stage about their weight.



Developing Slade's (1982) theory further, the parental influence must also be considered in explaining why it is that an eating disorder develops rather than some other psychological disorder. As outlined above, several clinicians (e.g., Hollender, 1965), argued that in spite of the generally pervasive nature of perfectionism, it can be prominent in some areas of behaviour and excluded in others, the areas of selection and exclusion being a reflection of what the parents value and do not value. From this perspective, if the parents place a high value on female slimness, a perfectionistic daughter is likely to learn this value from her parents. In doing so the daughter may be positively reinforced for behaviours promoting a slim figure (e.g., consuming low calorie foods rather than high calorie foods), and punished for behaviours counteracting this. If the parents place a low value on slimness then their perfectionistic offspring are less likely to learn to place a high value on a slim figure and thus less likely to develop an eating disorder. However, it is acknowledged that parents are not the sole influences on a child's learning. The powerful influences outside the family must not be overlooked in the aetiology of an eating disorder.

## CHAPTER SIX

### RATIONALE FOR THIS STUDY, AND, A MODEL FOR THE DEVELOPMENT OF ANOREXIA AND BULIMIA NERVOSA

#### 6.1 RATIONALE FOR THIS STUDY

##### 6.1.1 Multidimensional Perfectionism, Family Interaction and Eating Disorders

Clinical observations and empirical studies (outlined above) have found an association between perfectionism and anorexia and/or bulimia nervosa (e.g., Bastiani et al., 1995; Garner et al., 1983; Minuchin et al., 1978; Root et al., 1986; Srinivasagam et al., 1995; Thompson et al., 1987). However, prior to the 1990s such studies ignored the multidimensional nature of perfectionism. Multidimensional perfectionism researchers (Frost et al., 1990; Hewitt & Flett, 1991) claim that perfectionism per se is not necessarily problematic. This indicates a need for multidimensional perfectionism research to be examined in association with anorexia and bulimia nervosa.

Although the SCANS\* (Slade & Dewey, 1986) is arguably the first perfectionism questionnaire to contribute to an understanding of the multidimensional nature of perfectionism in measuring 'neurotic' perfectionism, as opposed to 'normal' perfectionism, it is essentially a unidimensional (rather than bidimensional) perfectionism measure (see Perfectionism Chapter above). Moreover, a fundamental issue which is largely ignored by the SCANS, and thus Slade's research, (e.g., Slade & Dewey, 1986; Slade et al., 1991) is that of family factors. Knowledge about the families of women with anorexia and bulimia nervosa is valuable, not only

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\* See Method Chapter below for a description of the SCANS.

because the family is usually involved in treatment, but also because numerous researchers have implicated specific family interaction characteristics in the aetiology of dysfunctional perfectionism (see Perfectionism Chapter above) and in the aetiology of anorexia and/or bulimia nervosa (see Family Studies Chapter above).

Like the SCANS, the MPS(H) largely ignores family factors, with only two of the 45 items pertaining to parents or family. On the other hand, Frost et al.'s (1990) MPS appears to give considerable attention to family factors in that two of the six dimensions of perfectionism (Parental Expectations and Parental Criticism) specifically measure perceptions of relationships with parents or family and/or perceptions of family interaction. However, Frost et al.'s (1990) MPS has had scant testing with eating disordered groups. The only published studies, to date, in which the Frost et al. (1990) MPS was administered to participant groups with (or recovered from) anorexia nervosa are Bastiani et al. (1995) and Srinivasagam et al. (1995). Bastiani et al.'s (1995) study was criticized (see Perfectionism Chapter above) for its methodological shortcomings. No published study, to date, has administered the Frost et al. (1990) MPS to a group of individuals with bulimia nervosa. Thus, there is scant published research, to date, which incorporates the multidimensional nature of perfectionism with family interaction and also with eating disorders.

## 6.2 AIMS OF THIS STUDY

The *major* aim of this study is to establish, through a battery of self-report psychometric tests, how women with anorexia and/or bulimia nervosa differ from healthy women and women with diabetes, especially with respect to perfectionism. Questions which arise in association with this are:

- Which facets of perfectionism differentiate women with eating disorders from women with diabetes and healthy women?
- How does depression influence characteristics which differentiate women with eating disorders from other women?
- How is perfectionism associated with (a) other characteristics of women, and, (b) perceptions of childhood relationships with parents/family?
- How are depression and dissatisfaction associated with (a) other characteristics of women, and, (b) perceptions of childhood relationships with parents/family?

As the study proceeded a subsidiary aim that developed was:

- To assess the validity of each of the instruments used in this study for administration to women with anorexia and/or bulimia nervosa.

This study will examine these issues in women with anorexia and bulimia nervosa, and compare them to women with diabetes and healthy women. A model of the development of anorexia nervosa, and at least one form of bulimia nervosa,\* via a dysfunctional perfectionism pathway, has been generated in association with this. This study will assess the presence of numerous characteristics of women with anorexia and/or bulimia nervosa which are proposed in the model. Although this study will also assess perceptions of relationships with parents/families during the first 16 years of life, it is unable to test the aetiological facets of the proposed model. The aetiological facets of the model are based on the theoretical literature outlined in the above chapters. Hence, the proposed model is a speculative path to anorexia and bulimia nervosa, not unequivocally supported by evidence. Arguably, the speculative nature of the model contributes to its utility.

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\* It is speculated here that the aetiology of bulimia nervosa is likely to be more heterogeneous than for anorexia nervosa. The forms of bulimia nervosa explained in the model are those in which the target individual grew up in a perfectionistic family environment. Such bulimia nervosa may or may not be preceded by anorexia nervosa.

## **6.3 MODEL: A DYSFUNCTIONAL PERFECTIONISM PATH FOR THE DEVELOPMENT OF ANOREXIA AND BULIMIA NERVOSA**

### **6.3.1 Introduction**

On the basis of the theoretical perspective outlined thus far, a model is developed of a dysfunctional perfectionism path for the development of anorexia and bulimia nervosa, which may explain key facets of the aetiology of anorexia and bulimia nervosa. Crowther, Wolf and Sherwood (1992) argued regarding bulimia nervosa, that a clear understanding of the aetiology of such a disorder requires the use of models "not only to incorporate individual, familial, and sociocultural factors but also recognize that these factors, individually or in combination, may have differential effects in those young women who subsequently develop bulimia nervosa" (p. 2). The current study adopts such a view for both anorexia and bulimia nervosa. Through the use of models we can more clearly understand the dynamic interaction between cultural, familial and individual factors in the aetiology of eating disorders.

Although Slade (1982) presented a model of the development of anorexia nervosa, no attention was accorded to the importance of the social learning process throughout childhood in the development of this disorder. The proposed model acknowledges the relevance of social learning in the aetiology of eating disorders and that neither the culture nor the family directly "cause" anorexia and/or bulimia nervosa. Rather, as agents of socialization, the culture and family are sources of numerous cues and reinforcements in the relationship between factors such as slimness, success, dieting, approval, and, self-control.

### 6.3.2 The Model

The model generated in this study (Figure 1) will not be justified extensively, as it is based on the arguments outlined in the preceding chapters (especially Chapters Three to Five inclusive). The model is speculatively presented as a typical path towards the development of anorexia and bulimia nervosa. The final stage of the onset of an eating disorder is not presented in the model. Although the model presents precursors to an eating disorder, it cannot include all precipitating factors, only those considered most pertinent to the development of anorexia and bulimia nervosa. Nor can the model account for all such cases. The unique and complex aetiology of every eating disorder case is acknowledged. Also of note, for most individuals who engage in dieting behaviour, such behaviour is neither disturbed nor disordered, with only a small fraction of dieters reaching the pathological stage at which an eating disorder develops (Patton, 1988). Consequently, the proposed model argues that eating problems occur on a continuum, along which dieting ranges from being non disturbed, through subclinical eating disorder to a fully blown eating disorder. Finally, although the model developed here primarily presents a social learning perspective, in identifying the role of the culture and family in the aetiology of anorexia and bulimia nervosa, the importance of a genetic contribution is also acknowledged in addition to individual specific, and shared family experiences.

The general constructs theorized to increase the risk for anorexia and bulimia nervosa are displayed in the boxes (Figure 1). Individual Factors are displayed on a separate sheet from Family and Socio-cultural Values. The overlaying sheets display (a) the influence of Family Factors on Individual Factors and (b) the influence of Socio-cultural Values on both Family and Individual Factors in the development of anorexia and/or bulimia nervosa.

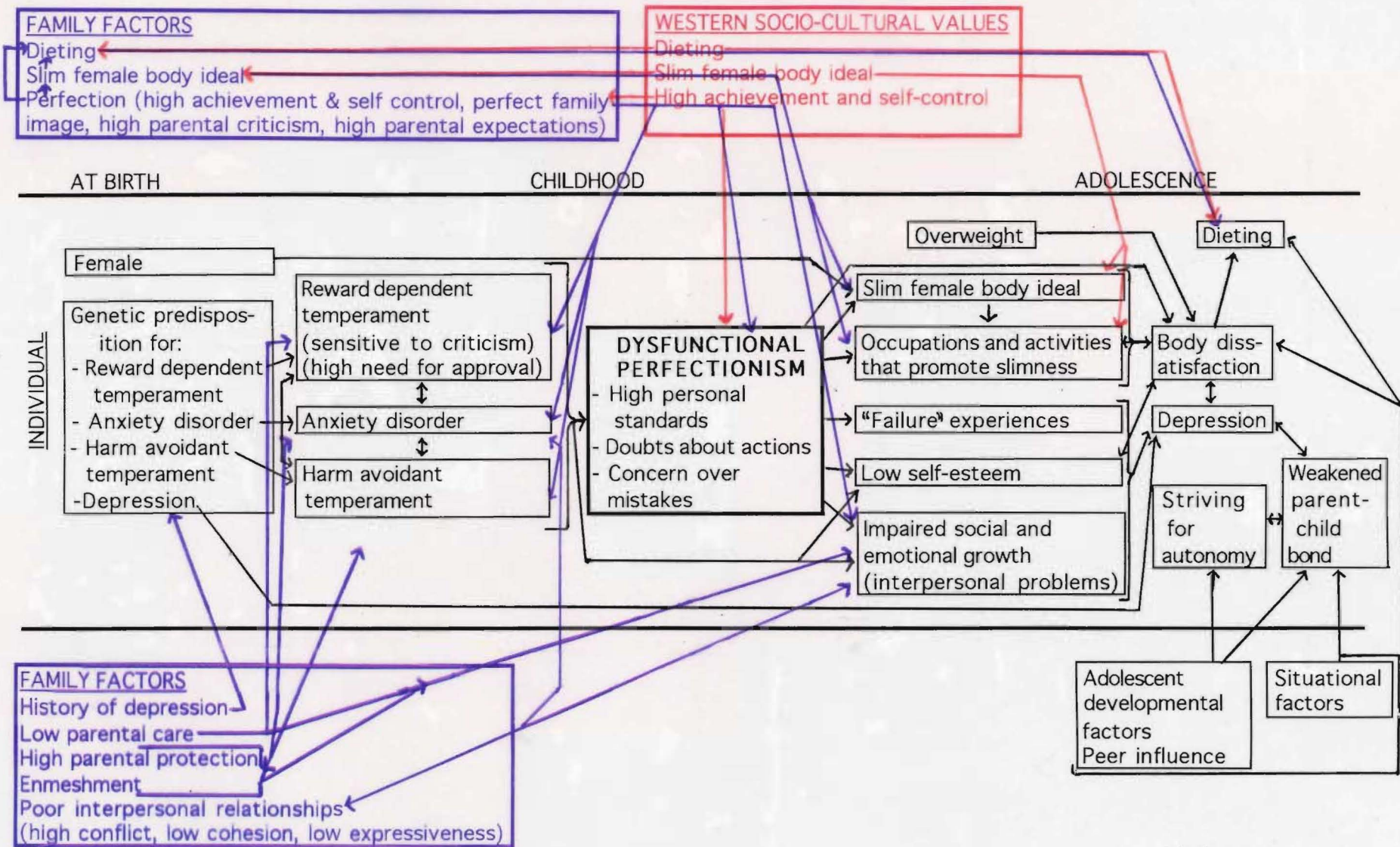


Figure 1: A Dysfunctional Perfectionism Path for the Development of Anorexia and Bulimia Nervosa.

The model is presented within the developmental context from birth through childhood and adolescence. The arrows indicate the potential causal pathways to anorexia and/or bulimia nervosa. Thus some of the earlier boxes in Figure 1 denote socio-cultural, family and individual factors that are speculated as likely to lead the development of dysfunctional perfectionism.

### Individual Factors

The individual factors, in the model, which are considered to be existent at birth are, being female, and characteristics for which the person may have a genetic predisposition. These are a reward-dependent temperament, anxiety disorder, harm-avoidant temperament, and, depression.\*

During childhood, some of the factors, for which the person has a genetic predisposition, develop into overt characteristics, within the context of a social learning framework. These characteristics are, reward-dependent and harm-avoidant temperaments, and an anxiety disorder. These characteristics do not occur in isolation, but rather interact with, and thus reciprocally influence, each other. Based on theories of reward-dependent behaviour (above) features of reward dependence are a sensitivity to criticism and a high need for approval.

The next major stage is the emergence of dysfunctional perfectionism. The features of dysfunctional perfectionism are high personal standards, doubts about actions, and, concern over mistakes.\*\* The concern over mistakes and/or doubts, demonstrate the negativity of perfectionism that is consistent with Hollender's (1965) theorizing about perfectionists focusing

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\* Reward Dependence and Harm Avoidance are temperament dimensions of the TPQ. Depression can be assessed using the BDI. See Method Chapter below for descriptions of the TPQ and BDI.

\*\* Personal Standards, Doubts about Actions, and Concern over Mistakes, are subscales of the MPS; see Method Chapter below for a description of the MPS.



on 'what is wrong' rather than 'what is right'. All of the characteristics identified prior to this stage (except for being female) contribute, within the context of environmental influences, to the development of dysfunctional perfectionism.

Dysfunctional perfectionism leads to several characteristics which tend to emerge during early adolescence. These include, a slim female body ideal (which is in part a consequence of being female) and occupations and activities that promote slimness. From a social learning perspective, if a woman has a perfectionistic attitude towards physical appearance she is likely to adopt the socio-cultural ideal for body shape and attempt to emulate this ideal.

Although a slim female body ideal and occupations and activities that promote slimness are not dysfunctional per se, these are important potential characteristics in the pathway to an eating disorder. These two characteristics jointly contribute to body dissatisfaction,\* and, conversely, body dissatisfaction contributes to occupations and activities that promote slimness. Body dissatisfaction is also, in part, a direct consequence of dysfunctional perfectionism, low self-esteem, being overweight, and depression.

In addition to the characteristics identified thus far, dysfunctional perfectionism is likely to lead to "failure" experiences, low self-esteem, and, impaired social and emotional growth. Failure experiences and low self-esteem are theorized to develop from dysfunctional perfectionism, essentially because of a focus on one's inability to meet excessively high self-standards. Impaired social and emotional growth is considered to be a major, and very broad, characteristic of women who develop anorexia and

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\* Body Dissatisfaction is a subscale of the EDI-2; see Method Chapter below for a description of the EDI-2.

bulimia nervosa. In addition to being influenced by dysfunctional perfectionism, impaired social and emotional growth is a consequence of the temperament of the individual. In this regard, a reward-dependent and/or harm-avoidant temperament and/or anxiety disorder are likely to impair the social and emotional development of the child. Interpersonal problems associated with impaired social and emotional growth are reflected not only in temperament measures, such as TPQ Harm Avoidance subscales of Anticipatory Worry, Fear of Uncertainty and Shyness, but also in several subscales of the EDI-2,<sup>\*</sup> namely, Ineffectiveness, Interpersonal Distrust, Maturity Fears, and Social Insecurity.

In the proposed model, failure experiences, low self-esteem, and, impaired social and emotional growth, in conjunction, contribute to the onset of depression. Body dissatisfaction and a weakened parent-child bond also contribute to depression and, conversely, depression may contribute to body dissatisfaction and/or a weakened parent-child bond.

Triggers for the onset of dieting are considered to be adolescent developmental factors, peer influence, and, situational factors, such as being teased about one's weight. These features are also likely to lead to body dissatisfaction, which is another trigger for dieting. Adolescent developmental factors and peer influence also contribute to striving for autonomy. These three factors, plus situational factors, may also weaken the parent-child bond. Conversely, a weakened parent-child bond may influence striving for autonomy. For example, a younger sibling may evoke increased interaction with a parent. Consequently, the parent is likely to interact less with, and provide less positive reinforcement than previously, for the daughter who develops the eating disorder (see Selvini-Palazzoli & Viaro's 1988 'model', above). This daughter is likely to interact increasingly

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<sup>\*</sup> See Method Chapter below for descriptions of the TPQ and EDI-2.

with her peers, and imitate the behaviours modelled by them, including dieting behaviour. The increased interaction with peers is evoked, not only by the parent-daughter relationship, but also by typical adolescent development and by peer influence.

The individual characteristics described in the model do not emerge suddenly, but rather develop gradually over time within the context of the environment which impacts upon them, and which they reciprocally impact upon. Moreover, although the model demonstrates each characteristic of women with eating disorders as occurring at a particular developmental stage, these characteristics may occur at an earlier or later stage for some individuals. However, the effects of these precursors to an eating disorder are likely to be heightened during adolescence. Further, although some of the characteristics in the model also occur for healthy adolescents, they are theorized to be more evident for women who develop anorexia and bulimia nervosa.

### Family Factors

Family factors (see overlay sheet, Figure 1) that are speculated to be precursors to an eating disorder in a female child include dieting, a slim female body ideal, and family perfection. The major facets of family perfection are high achievement and self-control, perfect family image, high parental criticism, and high parental expectations\* (see Perfectionism Chapter above). A slim female body ideal in families is, in part, a consequence of family perfection. Family dieting behaviour is, in part, a consequence of a slim female body ideal and of family perfection.

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\* Parental Criticism and Parental Expectations are subscales of the MPS; see Method Chapter below for a description of the MPS.

Parents play an important role in their children's attitudes towards dieting and body image. Parents who have internalized a slim female body shape as ideal tend to increase their children's awareness of body image, and thus the likelihood of body dissatisfaction (Striegel-Moore & Kearney-Cooke, 1994). Thus, the path from family factors to individual factors in the model indicates that a slim female body ideal in the family leads to a slim female body ideal for the individual, and to occupations and activities that promote slimness. Also, from a social learning perspective, in a family where a parent models dieting behaviour this may evoke dieting behaviour in the offspring. Such offspring may be positively reinforced by a parent for dieting behaviour. From a social learning perspective, family perfection is likely to contribute to the development of dysfunctional perfectionism in a vulnerable individual. Moreover, these vulnerabilities, such as a reward-dependent temperament, anxiety disorders and harm-avoidant temperament, are likely to be intensified by family perfection, as is impaired social and emotional growth in the offspring.

Other likely family precursors to the development of an eating disorder are, a familial history of depression, low parental care, high parental protection,\* enmeshment, and, poor interpersonal relationships, including high conflict, low cohesion, and low expressiveness.\*\* Clearly, a family history of depression is a risk factor for depression in the offspring. Low parental care is likely to in part contribute to several individual factors proposed in the model, particularly a reward-dependent temperament and impaired social and emotional growth. Social and emotional growth is also likely to be impaired from high parental protection, enmeshment, and poor interpersonal relationships. Excessive parental protection is also considered

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\* Parental Care and Parental Protection are dimensions of the PBI; see Method Chapter below for a description of the PBI.

\*\* Conflict, Cohesion, and Expressiveness are dimensions of the FES; see Method Chapter below for a description of the FES.

to contribute to the onset of an anxiety disorder, and to a harm-avoidant temperament in a vulnerable individual. Reciprocally, an anxiety disorder and/or a harm-avoidant temperament in a child is likely to intensify parental overprotection.

Of note, some of the family factors in the proposed model, although observed in some clinical studies, have usually been measured empirically by the perception of the offspring, rather than measured objectively. Although not shown as such, an important component of the model is the beliefs, or perceptions, of the female who develops an eating disorder, about herself, her family and her wider environment, and the ongoing interactions between herself and significant others. As eating disorders are primarily psychological disorders, in which the perceptions of the individual complexly interact with actuality, the perception of the individual who develops an eating disorder is considered here to be a fundamental mechanism in the establishment of an eating disorder. Consequently, some family factors in this model, in addition to applying to actual family environments, are considered to be perceived as such by women who develop anorexia and/or bulimia nervosa. Hence, such women tend to perceive their parents as highly critical, high in expectations, low in care, and overprotective of them. They also typically perceive their family environments as high in conflict, low in cohesion, and low in expressiveness (see Family Factors and Perfectionism Chapters above).

In the family environment outlined, parental approval of the developing child tends to be contingent upon success. If acceptance of a child by a parent is contingent upon the performance of the child, this will shape the child's behaviour patterns. For example, in an environment of high parental expectations and high parental criticism a daughter may learn that a perfect performance is the surest way to achieve parental approval (see

Perfectionism Chapter above). In time, the daughter's struggle to please her parents becomes a learned and maintained behaviour pattern. The approval which the daughter has consistently sought from her parents becomes so important to her self-esteem that she is highly sensitive to criticism. The daughter's perfectionism is driven more by concern over mistakes than by a healthy pursuit of excellence. The high need for approval from meeting perceived high expectations of significant others (socially prescribed perfectionism) becomes fundamental to the daughter's behaviours and cognitions (see Perfectionism Chapter above).

### Western Socio-cultural Values

As discussed above, in the Western world, cultural pressures to attain slimness are very powerful, particularly for adolescent females (e.g., Rosen & Gross, 1987). The major Western socio-cultural values thought to contribute to the onset of an eating disorder (see overlay sheet, Figure 1) are, dieting, a slim female body ideal, and high achievement and self-control. These socio-cultural factors are, in turn, considered to contribute to the very same factors in both the family and the individual who develops an eating disorder. A socio-cultural slim female body ideal is also likely to contribute directly to participation in occupations and activities that promote slimness, in that the high value placed on a slim female body in Western culture has, in part, contributed to a multi-million dollar "slimness" industry thus availing individuals to participate in occupations and activities associated with it.

### 6.3.3 Beyond the Model to an Eating Disorder

The proposed model is speculated to be a typical path towards the development of anorexia nervosa, and at least one form of bulimia nervosa.

The final stage of the onset of an eating disorder, not presented in the model, follows from the various precursors presented.

Although the proposed model is arguably a typical pathway towards the onset of an eating disorder, the specific manner in which this pathway is followed varies from individual to individual, as does the pathway beyond the model.

The initial loss of weight during the diet may result in significant others expressing approval and admiration for the slimmer body shape and strong will power of such a woman. For a woman with a reward-dependent temperament such reactions by significant others are likely to provide positive reinforcement both for dieting and for her beliefs that a slim body shape is ideal, a symbol of achievement, self-control, and hence social approval. This is likely to intensify her dieting behaviour.

The dysfunctional perfectionism the woman has displayed in the past, whereby goals were pursued to the extreme, is also likely to contribute to her intensified dieting behaviour. However, as the goal of a perfectly proportioned body is unattainable for most women, in attempting to pursue a slim ideal body she may become emaciated to the point of developing anorexia nervosa yet never achieve her goal. Her perception that she is overweight, her intense fear of weight gain, and her pursuit of thinness, may continue to dominate her cognitions and behaviours. Moreover, in becoming so preoccupied with her physical appearance, such a woman is unable to interact effectively with significant others. This may promote social rejection, and consequently intensified preoccupation with physical appearance, fear of rejection, failure experiences, and social isolation. This may in turn intensify the psychological disturbance, and thus facets of such disturbance, including low self-esteem, and depression.

Further positive reinforcement for a woman with anorexia nervosa is that her emaciation is likely to attract attention from significant others (usually parents) in the form of concern. Although a woman with anorexia nervosa may not have intended to upset others in her drive for social attention and approval, she has now at least probably secured much attention from her parents and hence social reinforcement for her behaviour (see Family Studies Chapter above).

For some women the dieting path leads to bulimia nervosa. Clearly, one potential route to bulimia nervosa is a history of anorexia nervosa. The disordered eating pattern of extreme restraint in women with anorexia nervosa sets them up for binge eating when the restraint pattern is broken (e.g., Polivy & Herman, 1985).\*

As argued above, women with bulimia nervosa may be a more heterogeneous population than women with anorexia nervosa. Thus more diverse routes to bulimia nervosa are likely. For many women who develop bulimia nervosa the diet cycle is broken at a weight in excess of that which would cause cessation of menstruation. It is at this stage that the binge/purge cycle is likely to begin (e.g., Polivy & Herman, 1985, 1987). Another likely route to binge eating is that described in Heatherton and Baumeister's (1991) escape model in which bingeing in women with excessively high standards is an avoidance of self-focussed attention.\*\* For some women with bulimia nervosa the binge eating pattern precedes the initial dieting (e.g., Agras, 1987; Marcus et al., 1988, 1990). In some cases, bingeing may serve as a form of self-nurturance to avoid depression

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\* For an outline of Herman and Polivy's restraint theory see 'Overweight and Dieting' section of Chapter Three (above).

\*\* For an outline of Heatherton and Baumeister's (1991) escape model see Perfectionism Chapter above.



(Striegel-Moore et al., 1986). Moreover, depression may be a precipitating factor for bingeing and/or a consequence of it. Women who experience high levels of stress are also at increased risk for binge eating (Abraham & Beumont, 1982; Strober, 1984). Much of the theory associated with this is incorporated in studies of obese binge eaters who do not purge.

In accordance with studies of obese binge eaters the bingeing is often a comforter to 'stuff' down uncomfortable emotions. Such emotions could be associated with one or more of various family problems e.g., substance abuse and/or sexual abuse. Root et al.'s (1986) research on women with bulimia nervosa, differentiating between the 'perfectionist' family and the 'chaotic' family is very relevant to this (see Family Studies Chapter above). A third family type outlined by Root et al. (1986), the 'overprotective' family, is postulated here to be integrated within these other two categories rather than distinct from them. This thesis speculates that obese women who binge eat are more likely to live in a 'chaotic family' than a 'perfectionist family'. Moreover, it seems that chaotic families are unlikely to characteristically generate perfectionism, and thus women in such families who suffer from bulimia nervosa (whether obese or not) are unlikely to have developed bulimia nervosa via a dysfunctional perfectionism pathway.

## CHAPTER SEVEN

### METHOD

#### 7.1 PARTICIPANTS

As eating disorders primarily occur within the female population, all participants in this study were female. All were between the ages of 18 and 40 years inclusive, and living in New Zealand. As women with bulimia nervosa tend to be somewhat older than women with anorexia nervosa, it was impractical to age match these two groups.

Participants were grouped into those with (1) anorexia nervosa (N= 25); (2) normal weight bulimia nervosa (N=32)\* ; (3) Type 1 diabetes (N=53), and (4) healthy women (N=25). The group of 25 participants with anorexia nervosa included 11 with symptoms of bulimia and 14 with restricting anorexia nervosa. Women with diabetes were selected as a comparison group because, unlike anorexia and bulimia nervosa, diabetes is not a psychiatric disorder, and yet, similarly to anorexia and bulimia nervosa, diabetes is a disorder in which an emphasis on body weight and diet are important, and parents of such women are likely to have been, and to be, very concerned about their daughters' body weights and diets.

In all instances, participants suffering from anorexia nervosa and/or bulimia nervosa had been diagnosed by the treating clinician as meeting DSM-III-R criteria for these disorders, and were undergoing treatment at the time of their inclusion in this research. The participants suffering from

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\* Women with concurrent anorexia, and obese women (body mass index > 30), were not included in the bulimia nervosa group. Body mass index (BMI) is defined as:  
$$\frac{\text{weight (kilograms)}}{\text{height (meters)}^2}$$

anorexia nervosa and/or bulimia nervosa were recruited from various sources throughout New Zealand. Canterbury sources were the Princess Margaret Hospital eating disorder service, Christchurch Women with Eating Disorders Resource Centre (WEDRC), University of Canterbury Student Health, Lincoln University Student Health, Timaru Public Hospital Kensington Centre, and clients of individual counsellors. Sources of respondents from outside Canterbury included clients of several institutions and/or of individual clinicians in the Auckland, Waikato, Manawatu-Wanganui, Wellington, and Otago districts.

The participants with diabetes were recruited through the Christchurch Diabetes Centre at Christchurch Public Hospital. At the time of this research women with diabetes (aged 18 to 30 years) were being co-recruited in a study by staff of the Diabetes Centre. Consequently all women with insulin-dependent diabetes, resident in North Canterbury, aged 18 to 30 years inclusive, were invited to participate in this research. These women were identified by staff of the Christchurch Diabetes Centre from a population-based register of people with insulin-dependent diabetes residing in the North Canterbury district. This included the Hurunui, Selwyn, Waimakariri and Banks Peninsula District Councils, and the Christchurch City Council, regions. Women enrolled in tertiary education in the Christchurch district at the time of the research were considered to be resident in the area if their general practitioner was also resident in the area. Women were excluded if they were pregnant or had had less than six months of insulin use at the time of the study. No woman was excluded from the study on the basis of a history of, or current diagnosis of, anorexia or bulimia nervosa.

The healthy women participants were students recruited from three classrooms at the Christchurch Polytechnic Department of Office and Travel.

All female students aged 18 to 40 years inclusive, who reported no history of anorexia or bulimia nervosa, were invited to participate.

The study was approved by the Ethics Committees of Canterbury University, Southern Regional Health Authority, Northern Regional Health Authority, Health Waikato, Manawatu-Wanganui, and Wellington, and by the Chief Executive Officer of the Palmerston North CHE.

## **7.2PROCEDURE**

### **7.2.1 Collection of Data**

Data were gathered over a period of 18 months from late 1992 to mid 1994. Participants were asked to complete a battery of seven psychometric tests. They were given the questionnaires to complete in their own time and to return in an enclosed reply-paid envelope. As the participants with diabetes were concurrently involved in research by staff of the Christchurch Diabetes Centre, which incorporated two of the questionnaires involved in this research (EDI-2 and BDI), these two questionnaires were completed in a face to face interview by a single interviewer (a medical student) at the Diabetes Centre. Following completion of the EDI-2 and BDI, the 69 women with diabetes were asked to complete the remaining five questionnaires in their own time, and to return them using the reply-paid envelope.

In all instances where the completed questionnaires had not been returned to the researcher within a reasonable length of time, a follow-up telephone call (if local), letter (if not local), was carried out to remind the potential respondent of the study and to enquire if they had any concerns regarding completion of the questionnaires.

### 7.2.2 Response Rate

#### Women with Anorexia and/or Bulimia Nervosa

Ninety three per cent of women with anorexia nervosa ( $N = 28/30$ ) and ninety per cent of women with bulimia nervosa ( $N = 35/39$ ) (as diagnosed by their treating clinicians) who agreed to participate in this research returned the completed battery of seven questionnaires. Two women with anorexia nervosa and four women with bulimia nervosa failed to return completed questionnaire packages.

Follow-up inquiries to the six women who had not returned completed questionnaire packages revealed various reasons for refusal to continue with the study including, time constraints (particularly for students), a proximity to recovery motivating a desire to put concerns related to the illness behind them, or discontinuation of treatment. Some potential respondents returned completed questionnaire packages following the final deadline given for participation in the research. These questionnaires were not, therefore, included.

As a back-up check, the completed EDI-2 questionnaires of all participants with anorexia and bulimia nervosa were examined by the researcher and a senior clinical psychologist for responses which indicated that they may not meet the DSM-III-R inclusion criteria for anorexia or bulimia nervosa at the time of completing the questionnaires. Although the EDI-2 can not be used as a diagnostic instrument for anorexia and/or bulimia nervosa, it does provide an indication of the likelihood that a respondent may be suffering from such a disorder. Consequently, although the treating clinicians who had invited these women to participate in the research had considered them

to meet inclusion criteria, exclusion on the basis of EDI-2 responses is arguably an important precautionary measure.

Thus women were not considered to be suffering from anorexia nervosa if (according to their EDI-2 responses) they did not claim an absence of at least three consecutive menstrual periods, loss of weight on purpose below a minimum normal weight for age, and a desire to maintain a weight below a minimum normal weight for age. Women were not considered to be suffering from normal weight bulimia nervosa if, for at least three months, (according to their EDI-2 responses) they did not claim a minimum average of two binge eating episodes a week, and two actively purging episodes a week in order to prevent weight gain. Also to meet the normal weight bulimia nervosa criteria, at the time of completion of the questionnaire, these women were required to have a BMI of less than 30, yet not so low as to induce amenorrhoea.

In six instances, where there was a strong element of doubt that the diagnostic criteria were met, these volunteers were eliminated from the study. This reduced the anorexia nervosa group from an initial pool of 28 volunteers to 25, and the bulimia nervosa group from 35 to 32 participants.

### Healthy Women

Twenty-nine women from three classrooms at the Christchurch Polytechnic Department of Office and Travel, aged 18-27 years inclusive, with no history of anorexia or bulimia nervosa agreed to participate in the research. Twenty-eight of these women (97%) returned the completed questionnaire packages, some following the standard reminder telephone call.

As with the anorexia and bulimia nervosa groups, the completed EDIs of these participants were examined by the researcher and a senior clinical psychologist for response indications that they were suffering (or had suffered) from anorexia or bulimia nervosa. In three instances where there was a likelihood of anorexia or bulimia nervosa (or a history of these disorders) these volunteers were eliminated from the study. Thus, from an initial recruitment pool of 28 "healthy" volunteers, 25 remained in the study.

### Women with Diabetes

Seventy-nine women in the North Canterbury area aged 18-30 inclusive were identified from a population based register as insulin dependent at the time of this study. Five of these women were excluded from participation due to pregnancy or less than six months duration of insulin use. Of the 74 women with diabetes who met inclusion criteria, five declined the invitation to participate. Thus 69 women (93% of those eligible) were included in the study. Of these 69 women who completed the EDI-2 and BDI in a face to face interview, 16 failed to return the remaining five questionnaires. Thus 53 women with insulin dependent diabetes completed the full battery of seven questionnaires (77% response rate).

In total, the seven questionnaires were completed by 135 respondents across the four groups in the study.

## **7.3 INSTRUMENTS, RATIONALE FOR THEIR USE, AND, HYPOTHESES**

The battery of questionnaires and psychometric tests employed in the study are self-report measures of disordered eating, depression, perfectionism, personality, and bonding with parents. These instruments were selected

because of their direct or indirect association with perfectionism and family interaction, and for their relevance to eating disorders.

### 7.3.1 Eating Disorder Inventory-2 (EDI-2; Garner, 1991)

#### Part A. Eating Disorder Inventory-2 Scales (EDI-SC)

The Eating Disorder Inventory Scales (EDI-SC) ascertains demographic and physical characteristics associated with weight and dieting patterns. The EDI-SC is divided into nine sections which assess information relevant to eating disorders regarding: dieting; exercise; binge eating; purging; laxatives; diet pills; diuretics; menstrual history, and, current medication. The EDI-SC performed an important function in this research by providing information regarding eating and weight pathology. As outlined above, the EDI-SC also served in this study as a back-up check that all respondents diagnosed by clinicians to have met the DSM-III-R inclusion criteria for anorexia or bulimia nervosa were likely to be suffering from the diagnosed disorder at the time of the study, and that the healthy volunteers did not suffer from anorexia and/or bulimia nervosa, or have a history of these disorders.

#### Part B. Eating Disorder Inventory-2 (EDI-2)

The Eating Disorder Inventory-2 (EDI-2) is a 91-item measure of cognitive and behavioural dimensions of anorexia nervosa and bulimia nervosa. All items are in statement form with six-point response continua ranging from "always" to "never". Item scores may range from 0 to 3, with some items being reverse scored. The eleven subscales of the EDI-2 measure, Drive For Thinness, Bulimia, Body Dissatisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness, Maturity Fears, Asceticism, Impulse Regulation, and Social Insecurity. The reliability and validity of the EDI-2 have been thoroughly established (Garner, 1991).



The Drive For Thinness subscale (seven items, possible range: 0-21) reflects excessive concern with dieting, preoccupation with body weight, fear of weight gain, and an excessive pursuit of thinness. The "drive for thinness" trait has been described as a fundamental feature of eating disorders (as outlined above; Bruch, 1973).

The Bulimia subscale (seven items, possible range: 0-21) indicates the tendency towards thinking about, or engaging in, episodes of binge eating. Regular binge eating is one of the defining features of bulimia nervosa.

The Body Dissatisfaction subscale (nine items, possible range: 0-27) measures the perception that specific areas of the body (e.g., stomach, hips, thighs, buttocks) are oversized. Body dissatisfaction is considered a major factor in the initiating and maintaining of dieting in people with eating disorders (outlined above, e.g., Levine & Smolak, 1992; Polivy & Herman, 1992).

The Ineffectiveness subscale (ten items, possible range: 0-30) indicates feelings of general ineffectiveness, lack of control, inadequacy, insecurity and worthlessness. Garner explained that the Ineffectiveness subscale, although a similar concept to low self-esteem or negative self-evaluation, goes further to "include feelings of emptiness and aloneness" (1991, p. 5).

The Perfectionism subscale (six items, possible range: 0-18) assesses excessive expectations of performance and the belief of a need to excel. The essential construct of Perfectionism is the belief that only the highest standard of performance by oneself is acceptable.

The Interpersonal Distrust subscale (seven items, possible range: 0-21) measures a general distancing of emotions from, a lack of trust in, and a reluctance to form close relationships, with others.

The Interoceptive Awareness subscale (ten items, possible range: 0-30) indicates perception of level of ability to recognize feelings and emotions accurately. It measures confusion and apprehension in one's perceived ability to do so.

The Maturity Fears subscale (eight items, possible range: 0-24) assesses the desire to regress to the security of childhood. The perceived pressures and conflicts of adulthood are central to this.

The Asceticism subscale (eight items, possible range: 0-24) measures the extent to which one believes in the denial of self pleasures, and the perceived ability to control this denial. Self-discipline, self-restraint and self-sacrifice are spiritual ideals through which virtue is sought.

The Impulse Regulation subscale (eleven items, possible range: 0-33) assesses the level of tendency to act on impulse and to behave in an irrational manner. Behaviour typifying poor impulse regulation includes substance abuse, hostility, self-destructiveness, and, destructiveness in relationships with others.

Finally, the Social Insecurity subscale (eight items, possible range: 0-24) reflects the level of comfort perceived in one's relationships with others. A high social insecurity score reflects a belief in poor quality relationships with others. Such relationships are usually tense, insecure and unrewarding.

The EDI-2 also provides measures of personality traits hypothesized to be associated with eating disorders. Subscales of the EDI-2 which measure personality traits include: Ineffectiveness, Perfectionism, Interpersonal

Distrust, Interoceptive Awareness, Asceticism, Impulse Regulation, and Social Insecurity.

The EDI-2 has been selected for this research not only for its specific relevance to eating disorders and personality factors, but also as it measures some elements of perfectionism - the Perfectionism subscale being the most obvious measure of this. In addition to the Perfectionism subscale of the EDI-2, it may be that other EDI-2 subscales are associated with dysfunctional perfectionism, and therefore will correlate with perfectionism on the Setting Conditions for Anorexia Nervosa Scale (SCANS; Slade & Dewey, 1986) and the Multidimensional Perfectionism Scale (MPS; Frost et al., 1990). For example, the Asceticism subscale of the EDI-2 may be associated with dysfunctional perfectionism, as the self-discipline aspect of asceticism is a fundamental characteristic of perfectionism. Only through self-discipline and self-denial are dysfunctional perfectionists able to pursue their goals to an unhealthy extreme.

### Hypotheses

- In light of previous research, it is hypothesized that women with anorexia nervosa, and women with bulimia nervosa, will score higher than women with diabetes and healthy women on the subscales of, Drive For Thinness, Body Dissatisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness, and, Maturity Fears. And, by virtue of definition, it is hypothesized that women with bulimia nervosa will score significantly higher than women with restricting anorexia, women with diabetes and healthy women on the Bulimia subscale.
- For women with diabetes, no reported findings exist for the subscales of Asceticism, Impulse Regulation, and, Social Insecurity. However,

because women with diabetes scored more akin to healthy controls than to women with eating disorders on all other EDI-2 subscales, it is hypothesized that women with anorexia nervosa, and women with bulimia nervosa will score significantly higher than healthy women *and* women with diabetes on the Asceticism, Impulse Regulation, and, Social Insecurity subscales.

### Correlational Hypotheses

Several correlational hypotheses will also be tested. Due to the considerable overlap among questionnaires dictated by such hypotheses, to avoid repetition, all correlational hypotheses are outlined near the end of this chapter.

#### 7.3.2 Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock & Erbaugh, 1961)

The Beck Depression Inventory (BDI), a 21-item self-report scale designed to measure the severity of depressive symptomatology, includes 13 cognitive-affective and 8 somatic symptoms of depression (Beck et al., 1979). The BDI has been used frequently in studies of eating disorders.

The level of depression for each respondent is obtained from the sum of the item scores on the 21 questions. The higher the sum total, the higher the level of depression is considered to be. Each item offers the respondent a choice of four statements with a four-point response continua from 0 to 3 considered to indicate the severity of the symptom. Hence the possible range is 0-3 for each item, and 0-63 for the summed totals. The summed item scores can also be scored categorically according to severity of depression in which 0-9 is normal range, 10-15 mild depression, 16-19 mild-moderate depression, 20-29 moderate-severe depression, and, 30-63 severe

depression. The reliability and validity of the BDI have been demonstrated over several studies (Beck, Steer & Garbin, 1988).

The cognitive model of depression was developed by Beck (1976) portraying symptoms of depression as consequences of distorted thought processes. In the model, Beck relates depression to negative construction of reality. Dankberg (1991) defined cognitive distortions as "systematic errors in thinking that maintain the validity of negative concepts despite the presence of contradictory evidence" (p. 134). Beck's (1976) theoretical model includes six typical cognitive distortions: arbitrary inference, selective abstraction, overgeneralization, magnification and minimization, personalization, and dichotomous thinking. Arbitrary inference involves jumping to a conclusion despite lack of evidence to support or substantiate it. Selective abstraction involves focusing on detail taken out of context while overlooking the more significant aspects of a situation, and consequently drawing conclusions on the basis of inappropriate use of information. Overgeneralization consists of making a conclusion based on one or more isolated events and applying the conclusion to irrelevant as well as relevant situations. Magnification (or catastrophizing) and minimization involve major misjudgements in evaluating the significance of occurrences. Personalization involves associating external events with oneself without foundation. Dichotomous thinking involves a tendency to see things at one extreme or another, that is, all-or-nothing thinking.

The BDI was selected for this research due to the considerable comorbidity found between symptoms of anorexia and bulimia nervosa and depression (outlined above, e.g., Steiner, 1990; Strauss & Ryan, 1988). The BDI was also considered important to this research in view of the association claimed to exist between TPQ Harm Avoidance and depression (outlined above, Svrakic et al., 1992), and between perfectionism and depression (outlined

above, e.g., Hewitt et al., 1990; Hollender, 1965). It was intended to ascertain which dimensions of perfectionism on the MPS are most highly correlated with BDI depression. Also, as one of the two constructs considered to underlie eating disorders measured by the SCANS (Slade & Dewey, 1986) is 'Dissatisfaction' (the other being 'Perfectionism'), scores on the BDI will be correlated with those on the Dissatisfaction subscale of the SCANS to ascertain if they are measuring similar or dissimilar constructs.

Given that harm avoidance is related to depression, perfectionism is related to depression, and dissatisfaction is likely to be related to depression (outlined above), this leads to the question of how much of these associations is mediated by depression. It may be that the BDI is accounting for a large percent of the variance in HA, perfection, and dissatisfaction measures. Consequently the BDI will be used as a covariate in some analyses.

### Hypothesis

- In light of previous research findings, it is hypothesized that women with anorexia nervosa, and women with bulimia nervosa, will demonstrate higher degrees of depression on the BDI than women with diabetes and healthy women.
- In light of previous research findings, it is hypothesized that women with diabetes will score within the normal range of scores for BDI depression, but will demonstrate higher degrees of BDI depression than healthy women.

### 7.3.3 Multidimensional Perfectionism Scale (MPS; Frost, Marten, Lahart & Rosenblate, 1990)

The Multidimensional Perfectionism Scale (MPS) is a 35-item measure of various dimensions of perfectionism. All items are in statement form with five-point response continua ranging from "strongly disagree" to "strongly agree". In addition to an overall perfectionism score (MPS Total, possible range: 29-145) there are five core subscales. These subscales measure: Concern Over Mistakes (nine items, possible range: 9-45), Personal Standards (seven items, possible range: 7-35), the perception of Parental Expectations (five items, possible range: 5-25), the perception of Parental Criticism (four items, possible range: 4-20), and Doubts about Actions (four items, possible range: 4-20). Additionally, the MPS includes one related subscale: Organization (six items, possible range: 6-30). Evidence of the reliability and validity of each dimension is presented in Frost et al. (1990) and, Frost, Lahart and Rosenblate (1991).

While the dimension of Organization was found by Frost et al. (1991) to be associated with positive self-concept and other healthy characteristics, the dimension of Personal Standards was found to be associated with both positive and negative concepts. The remaining four dimensions of, Concern Over Mistakes, the perception of Parental Expectations, the perception of Parental Criticism, and Doubts about Actions, were found to be fundamentally associated with negative concepts. It is these negative concepts which are of primary interest in understanding dysfunctional perfectionism.

Frost et al. (1990) claimed Concern Over Mistakes to be the central component of perfectionism in that this dimension was found to be the aspect of perfectionism distinguishing perfectionists from those who seek

high standards of themselves because they are highly competent and successful. The dimension of Personal Standards has also been found by theorists to be an important component of perfectionism, whereby excessively high personal standards are set which are unable to be satisfactorily met. According to Frost et al. (1990) high scores on the MPS dimensions of Parental Expectations and Parental Criticism reflect concepts claimed by some theorists to be the most fundamental in the development of pathological perfectionism (Hollender, 1965; Hamachek, 1978; Burns, 1980; Pacht, 1984). The MPS dimension of Doubts about Actions has theoretical underpinnings associated with an almost obsessional type of doubt outlined by Reed (1985). Finally, the dimension of Organization, measuring a preference for order and organization, an aspect of perfectionism discussed by Hollender (1965), is considered by Frost et al. (1991) to be somewhat detached from the other MPS dimensions of perfectionism, and thus not included in the overall MPS Total.

Although never tested in relation to bulimia nervosa, the MPS provides considerable insight into interpersonal relationships. In designing the MPS, Frost et al. (1990) assumed that familial factors are likely to play a significant role in the aetiology of perfectionism. The MPS is used as an instrument in this study as it appears to be the only measure of perfectionism which focuses specific subscales entirely on perceptions of interaction with parents. Thus, the MPS is expected to provide valuable information regarding perceptions about parents which may be associated with anorexia and bulimia nervosa. A major shortfall of the SCANS as a measure of perfectionism is that it is unable to provide such an insight. Of particular interest in this study are the MPS dimensions of Parental Expectations and Parental Criticism.



- It is hypothesized that women with anorexia nervosa, and women with bulimia nervosa, will obtain higher mean scores than women with diabetes and healthy women on the MPS Total and on the MPS subscales of Concern Over Mistakes, Parental Expectations, Parental Criticism, and Doubts About Actions, but that women with anorexia nervosa, and women with bulimia nervosa, groups will not differ significantly from each other. Given that perfectionism is related to depression (outlined above), it is hypothesized that BDI will be an important covariate in this association.
- Given Frost et al.'s (1991) claims that Organization is associated with positive self-concept, and Personal Standards is associated with both positive and negative concepts, it is hypothesized that there will be no significant difference across the four groups on the MPS subscales of Organization and Personal Standards.

#### 7.3.4 Setting Conditions for Anorexia Nervosa Scale (SCANS; Slade & Dewey, 1986)

The Setting Conditions for Anorexia Nervosa Scale (SCANS) is a 22-item questionnaire designed to measure two major setting conditions (general dissatisfaction and perfectionism) considered to provide the essential basis for the development of anorexia nervosa and one form of bulimia nervosa (i.e., bulimia nervosa preceded by anorexia nervosa) (Slade, 1982; Slade & Dewey, 1986). All items are in question form with five-point response continua. The two main scales of the SCANS are Perfectionism (eight items, possible range: 8-40) and General Dissatisfaction (fourteen items, possible range: 14-70). A perfectionist is defined as any person scoring above 23 on the Perfectionism scale, and a dissatisfied person is defined as anyone scoring above 41 on the General Dissatisfaction scale.

According to Slade, Newton, Butler and Murphy (1991), the SCANS measures neurotic perfectionism, neurotic perfectionists being those with a high score on the Perfectionism and General Dissatisfaction scales in conjunction.

Evidence of the SCANS' reliability and validity is presented in Slade, Dewey, Kiemle and Newton (1990). Slade et al. (1990) administered the SCANS to three eating disorder groups and three normal comparison groups. The eating disorder groups were women with (1) anorexia nervosa, (2) bulimia nervosa with a previous history of anorexia nervosa, and (3) bulimia nervosa without a history of anorexia nervosa. All three eating disorder groups obtained high mean scores on both subscales of the SCANS and did not differ significantly from each other on either subscale. All three comparison groups obtained relatively low mean scores on both subscales and did not differ significantly from each other on either subscale. The combined scores of the three eating disorder groups were found to be significantly higher than the combined scores of the three comparison groups on both subscales.

The SCANS is valuable in this study as it is the first instrument designed to differentiate between women with anorexia and bulimia nervosa and healthy women solely on the basis of perfectionism. The correlation between SCANS scores and measures of perceptions of family environment and parental bonding may indicate some association between neurotic perfectionism (as defined by Slade and Dewey, 1986) and subjective elements of family interaction.

## Hypotheses

- On the basis of Slade et al.'s (1990) research it is hypothesized that, on the SCANS, women with anorexia nervosa, and women with bulimia nervosa, will demonstrate higher degrees of Perfectionism and General Dissatisfaction than women with diabetes and healthy women, but that women with anorexia nervosa, and women with bulimia nervosa, groups will not differ significantly from each other. Given that perfectionism is related to depression, and dissatisfaction is likely to be related to depression (outlined above), it is hypothesized that BDI will be an important covariate in these associations.

### 7.3.5 Tridimensional Personality Questionnaire (TPQ; Cloninger, 1987)

As with the EDI, the Tridimensional Personality Questionnaire (TPQ) also measures personality factors. Based on Cloninger's biosocial theory of personality the TPQ describes and classifies personality variants. The model on which Cloninger based the TPQ asserted "that genetically induced neurophysiological processes determine basic personality dimensions,\* which direct global behavioral tendencies and determine the acquisition of attitudes, opinions, and beliefs from the range in a given society" (Svrakic, Przybeck & Cloninger, 1991, p. 196). However, in making this claim Cloninger acknowledged that certain aspects of individual personality differences are essentially culturally determined (Svrakic et al., 1991). Included in these elements are traditions relating to grooming, dress and diet. Also in relation to the TPQ, Cloninger (1987) hypothesized that "personality disorders may be extreme variants of personality traits that are maladaptive because of inflexible responses to particular situations and

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\* Cloninger and associates have since claimed that these are dimensions of temperament, rather than personality dimensions (Cloninger, Svrakic & Przybeck, 1993).

additional influences from inconsistent or inappropriate social learning" (p. 586).

The TPQ is a 100-item true/false inventory which assesses four temperament dimensions of Novelty Seeking (NS), Harm Avoidance (HA), Reward Dependence (RD) and Persistence. The NS and HA dimensions are each subdivided into four subscales, and RD into three subscales, whereas Persistence is a single scale dimension. Until recently Persistence was incorporated in the Reward Dependence measure as the second of four subscales. Evidence of the TPQ's reliability and validity is presented in Cloninger (1987) and Nixon and Parsons (1989). Cloninger's (1987) initial study with medical students demonstrated that the then three temperament dimensions were statistically virtually independent of one another, and that each dimension had considerable construct validity. Similarly, Nixon and Parsons' (1989) study found the three temperament dimensions of the TPQ to be essentially independent of each other.

The NS1 subscale (nine items, possible range: 0-9) assesses exploratory excitability versus stoic rigidity.\* The NS2 subscale (eight items, possible range: 0-8) assesses impulsiveness versus reflection. NS3 (seven items, possible range: 0-7) assesses extravagance versus reserve, and NS4 (ten items, possible range: 0-10) assesses disorderliness versus regimentation. The sum of the NS subscale scores provides a NS Total score (possible range: 0-34). A high NS score is considered to indicate a personality which tends towards being curious, impulsive, quick-tempered and disorderly, whereas a low NS score is considered to indicate an individual to be reflective, stoical, slow tempered and orderly (Svrakic et al., 1991).

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\* See Table 1 for layout of TPQ dimensions and subscales and associated hypotheses.

The HA1 subscale (ten items, possible range: 0-10) assesses anticipatory worry/pessimism versus uninhibited optimism. The HA2 subscale (seven items, possible range: 0-7) assesses tension about uncertainty versus carelessness and confidence. The HA3 subscale (seven items, possible range: 0-7) assesses social shyness versus gregariousness. The HA4 subscale (ten items, possible range: 0-10) assesses fatiguability and asthenia versus vigour. The sum of the HA subscale scores provides a HA Total score (possible range: 0-34). A high HA score is considered to indicate an individual who tends towards being apprehensive, shy, pessimistic, and fatiguable, whereas a low HA score is considered to indicate an individual who tends towards being optimistic, carefree, outgoing and energetic (Svrakic et al., 1991).

In relation to TPQ HA, Cloninger argued that aversive conditioning contributes to the development in individuals of increased harm-avoidant behaviour and decreased novelty-seeking and reward-dependent behaviours. Consequently, "individuals exposed to consistent aversive conditioning become more cautious, less exploratory and impulsive, and less sensitive to peer pressures" (1987, p. 586).

The RD1 subscale (five items, possible range: 0-5) assesses sentimentality versus insensitiveness. The RD2 subscale (eleven items, possible range: 0-11) assesses social attachment versus detachment. The RD3 subscale (five items, possible range: 0-5) assesses dependence versus independence. The sum of the RD subscale scores provides a RD Total score (possible range: 0-21). A high RD score is considered to indicate a personality which tends towards being sentimental, socially sensitive, tender-hearted and dedicated, whereas a low RD score is considered to indicate an individual as being insensitive, practical, irresolute, tough minded and detached (Svrakic et al., 1991).

The Persistence dimension (nine items, possible range: 0-9) assesses persistence versus irresoluteness. This is the only stand-alone scale in the TPQ.

The TPQ was selected as an instrument for this study to provide some insight into the temperaments of women with anorexia and bulimia nervosa, and how temperament relates to perfectionism.

Rosenthal (1993, outlined above, see: *The Association between Perfectionism, Self-esteem and Depression*) in relation to perfectionism and body image claims that when fear dominates our life and we feel more negative, we take fewer risks. Thus, in relation to Cloninger's model it would be expected that perfectionists would tend to score more highly on the Harm Avoidance dimension. The HA subscales of Anticipatory Worry and Fear of Uncertainty appear to largely measure the construct of fear outlined by Rosenthal.

The HA subscale of Shyness is also relevant to the fear claimed to be characteristic of perfectionists. Several researchers (outlined above) argue that perfectionists' fear usually blocks their ability to form close and intimate relationships (Burns, 1980; Missildine, 1963). Examples of items which indicate shyness on the HA Shyness subscale include: "I often avoid meeting strangers because I lack confidence with people I do not know" (item 37, true response), and, "I feel very confident and sure of myself in almost all social situations" (item 89, false response).

Unlike the EDI, which has been extensively used to compare eating disorder with non-eating disorder samples, the TPQ has had scant use in this area. As outlined above Brewerton et al.'s (1993) research, apparently the first published using the TPQ to compare women with eating disorders to

women without eating disorders, copied the control group data of Cloninger, Przybeck and Svrakic's normative data for Caucasian females (1991). Thus, prior to commencement of the current study, no published study was located in which the TPQ had been administered by the researchers to eating disordered and non-eating disordered sample groups. Such research, as proposed here, is likely to provide some insight into which temperament dimensions of the TPQ are more specific to eating disordered groups than to the other groups in the study.

Table 1 presents hypothesized differences across groups on the TPQ.

Table 1. Hypothesized differences across groups on TPQ.

TPQ Variable	Anorexia Nervosa	Bulimia Nervosa	Healthy	Diabetes
Novelty Seeking Total	-	H		
NS1: Exploratory Excitability	-	-		
NS2: Impulsivity	-	H		
NS3: Extravagance	-	-		
NS4: Disorderliness	-	-		
Harm Avoidance Total	H	H		
HA1: Anticipatory Worry	H	H		
HA2: Fear of Uncertainty	-	-		
HA3: Shyness	H	H		
HA4: Fatiguability	H	H		
Reward Dependence Total	H	H		
RD1: Sentimentality	-	-		
RD2: Attachment	-	-		
RD3: Dependence	H	H		
Persistence	H	-		

Key:

H = significantly higher

Hypotheses (refer to Table 1 for summarized hypotheses)

- In light of the findings of Bulik et al. (1995) and Brewerton et al. (1993), it is hypothesized that, on the NS Total dimension of the TPQ, women with bulimia nervosa will score higher than women with restricting anorexia, healthy women, and, women with diabetes.
- In light of Brewerton et al's (1993) robust finding of higher HA in all eating disorder groups in comparison to healthy controls, it is hypothesized that women with anorexia nervosa, and women with bulimia nervosa, will demonstrate higher degrees of harm avoidance on the TPQ HA Total dimension than women with diabetes and healthy women.\* Given that HA is related to depression (outlined above), it is hypothesized that BDI will be an important covariate in this association.
- As the findings of Brewerton et al. (1993) of higher TPQ HA in eating disorder groups, in comparison to normal controls, were significant on the subscales of HA1 (Anticipatory Worry), HA3 (Shyness),\*\* and HA4 (Fatiguability), it is hypothesized that women with anorexia nervosa, and women with bulimia nervosa, will score significantly higher on the Anticipatory Worry, Shyness and Fatiguability subscales of the TPQ than healthy women and women with diabetes.
- Although research associating a reward-dependent temperament with eating disorders is inconclusive, because a reward-dependent temperament may be associated with dysfunctional perfectionism (outlined above), it is hypothesized that women with anorexia nervosa,

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\* This hypothesis is also in accordance with Rosenthal's (1993) argument that pathological perfectionists are likely to take fewer risks than healthy people.

\*\* This hypothesis regarding Shyness is in accordance with Burns' (1980) and Missildine's (1963) claims that perfectionists' fear usually prevents intimate relationships.



and women with bulimia nervosa, will score significantly higher on the TPQ RD Total dimension than healthy women and women with diabetes.

- As Brewerton et al. (1993) and Bulik et al. (1995) (outlined above) found no significant differences across groups on the TPQ RD Sentimentality subscale, no predictions are made related to Sentimentality.
- In light of Brewerton et al.'s (1993) and Bulik et al.'s (1995) contradictory findings on the RD Attachment subscale, no predictions are made related to Attachment.
- Consistent with the claims of numerous researchers of high dependence in women with anorexia and/or bulimia nervosa (e.g., Minuchin et al., 1978; Root et al., 1986), and as the scores for all eating disorder groups of Bulik et al. (1995) are higher than those found in studies of university students (e.g., Svrakic, 1991), it is hypothesized that women with anorexia nervosa, and women with bulimia nervosa, will score significantly higher on the TPQ RD Dependence subscale than healthy women and women with diabetes.
- In light of Brewerton et al.'s (1993) findings that, in comparison to the female controls, women with anorexia scored significantly higher on the RD Persistence subscale, it is hypothesized that women with anorexia nervosa, will score significantly higher on the Persistence dimension of the revised TPQ than healthy women and women with diabetes.

### **7.3.6 Parental Bonding Instrument (PBI; Parker, Tupling & Brown, 1979)**

The Parental Bonding Instrument (PBI) is a 25-item instrument which measures recall up to 16 years of age of parenting styles. All items are in statement form with four-point response continua of perceptions about parents ranging from "very like" to "very unlike". Each item score has a possible range of 0 to 3. The PBI has four subscales with two dimensions each relating separately to maternal and paternal parenting styles. The Care dimension of the PBI measures the perceived warmth and empathy through Maternal Care (twelve items, possible range: 0-36), and Paternal Care (twelve items, possible range: 0-36). The Protection dimension measures perceptions of parental overprotection and control through Maternal Protection (thirteen items, possible range: 0-39), and Paternal Protection (thirteen items, possible range: 0-39). The 25 paternal items follow, and are a replica of, the 25 maternal items.

As this study is very much associated with perceptions of parents by participants, the PBI has been included as an instrument for its value in measuring participants' recollections of their relationships with their parents. As Parker (1983) pointed out, it may be that the subjective aspect of parental characteristics are more relevant to the maintenance of psychological disorders than are objective characteristics.

The reasonably consistent findings of previous researchers (outlined above, e.g., Calam et al., 1990; Kendler et al., 1991;\* Rhodes & Kroger, 1992) of perceived lower care/warmth in parents of women with anorexia and bulimia nervosa than parents of healthy women, provides a stable research basis for comparisons in this study between perceived parental care levels and perceived parental expectations and parental criticism on the MPS. If a

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\* Kendler et al.'s (1991) findings of low care was in fathers, but not mothers, of women with bulimia nervosa.

high correlation is found to exist between parental care on the PBI and Parental Expectations and Parental Criticism on the MPS, this would add support to the model generated in this study of a high need for parental approval developing due to perceived low parental care, high parental expectations, and, high parental criticism.

### Hypotheses

- In light of previous research, it is hypothesized that women with anorexia nervosa, and women with bulimia nervosa, will perceive their mothers and their fathers as lower in care/warmth on the PBI than will women with diabetes, and healthy women.
- Although research findings regarding the PBI Protection dimensions are inconsistent and contradictory, it is hypothesized that mothers and fathers of women with anorexia and bulimia nervosa will be perceived as more overprotective on the PBI than parents of women with diabetes, and parents of healthy women. This hypothesis is consistent with Walters and Kendler's (1995) findings for women with anorexia nervosa,\* and with New Zealand research findings using the PBI (outlined above, Rhodes & Kroger, 1992). It is also consistent with systems models of family environments, based on clinical observations, claiming that an overprotective family environment is characteristic for women with anorexia and/or bulimia nervosa (outlined above, e.g., Minuchin et al., 1978; Selvini-Palazzoli & Viaro, 1988; Root et al., 1986).
- There appears to be no relevant research using the PBI for people with diabetes. Although careful attention to diet is demanded of people with diabetes for medical reasons, this provides no clear indication whether or

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\* However, Kendler et al. (1991), using the same population sample, did not find significant differences on the PBI Protection dimension for women with bulimia nervosa (outlined above).

not this will reflect overprotection by parents in this study. However, as parents of women with diabetes are likely to be very concerned with their daughters' diets, it is hypothesized that, on the PBI, women with diabetes will perceive higher degrees of maternal and paternal protection than will healthy women.

### 7.3.7 Family Environment Scale (FES; Moos & Moos, 1981)

The Family Environment Scale (FES) is a 90-item inventory designed to reflect different characteristics of the family social-environment. The FES is one of ten Social Climate Scales. The FES has three alternative forms: the Real Form (Form R), which assesses 'people's perceptions of their conjugal or nuclear family environments', the Ideal Form (Form I), which assesses 'people's conceptions of ideal family environments', and, the Expectations Form (Form E), which assesses 'people's expectations about family settings' (Moos & Moos, 1986). For the purpose of this study Form R was used.

The ten subscales of the FES measure, Cohesion, Expressiveness, Conflict, Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active Recreational Orientation, Moral-Religious Emphasis, Organization, and, Control. Each subscale contains nine true/false statements with a possible subscale score ranging from 0 to 9. The ten FES subscales measure three underlying sets of dimensions: the Relationship dimensions, the Personal Growth dimensions, and, the System Maintenance dimensions. The psychometric reliability and validity of the FES has been thoroughly established (Moos & Moos, 1986).

The Cohesion subscale measures "the degree of commitment, help, and

support family members provide for one another".\* The Expressiveness subscale measures "the extent to which family members are encouraged to act openly and to express their feelings directly". The Conflict subscale assesses "the amount of openly expressed anger, aggression, and conflict among family members". These three subscales comprise the Relationship dimension of the FES (Moos & Moos, 1986).

The Independence subscale measures "the extent to which family members are assertive, are self-sufficient, and make their own decisions". The Achievement Orientation subscale measures "the extent to which activities

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\* Previous research using the FES (see Chapter Three above) found the family environments of women with anorexia and/or bulimia to be less cohesive than families of healthy women controls (e.g., Johnson & Flach, 1985; Ordman & Kirschenbaum, 1986; Stern et al., 1989). Moos and Moos (1986) found distressed families scored generally lower than healthy families on FES Cohesion. The Family Circumplex Model, a model developed to explain family functioning, also includes a Cohesion dimension, assessed by the Family Adaptability and Cohesion Evaluation Scales III (FACES III; Olson, Portner & Lavee, 1985). In the Family Circumplex Model, Cohesion is defined as "togetherness" (Olson & DeFrain, 1994). According to the Family Circumplex Model, healthy family cohesion is near the middle of the spectrum, whereas very low cohesion indicates a "disengaged" family, and very high cohesion indicates an "enmeshed" family (Olson & DeFrain, 1994). As outlined above (see Chapter Four), families of women with anorexia have been found to be typically enmeshed (Minuchin et al., 1978). Because, according to the Family Circumplex Model, enmeshed families are those high on cohesion, it would seem that families of women with anorexia are high on cohesion. However, (as stated above) research using the FES found families of women with anorexia to be typically *low* on cohesion. Thus, there appears to be a discrepancy in the construct of cohesion between the FES and the FACES III. Numerous researchers have questioned the validity of the FACES III instrument (e.g., Kuehl, Schumn, Russell & Jurich, 1988; Walker, McLaughlin & Greene, 1988; Fristad, 1989). Kuehl et al. (1988) and Fristad (1989) argued that, contrary to the predictions of the Circumplex Model, a linear, rather than quadratic, relationship exists between adaptability and cohesion with family functioning. Kuehl et al. (1988) claimed that some of the problems with the FACES III instrument may be due to the items being misinterpreted, or not interpreted in the way expected by the subjects. Walker et al. (1988) examined whether the FACES II, (predecessor to FACES III, and similar, with some questions duplicated), differentiated between families of healthy adolescents and families of adolescents with functional somatic diagnosis. Walker et al. (1988) concluded that "high levels of cohesion on the FACES II were not associated with somatization, suggesting that high cohesion may not reflect enmeshment" (p. 324). Thus Walker et al. (1988) argued that enmeshment, a construct assessed clinically, may not be able to be assessed by the Circumplex Model. Other critics of the Circumplex Model have also found an association between high cohesion and healthy family functioning (e.g., Beavers, Hampson & Hulgus, 1985; Green, Kolevzon & Vosler, 1985). These examples of the numerous criticisms of the Family Circumplex Model suggest that the discrepancy in the construct of cohesion between the FES and the FACES III may be due to problems with the Family Circumplex Model. Consequently, this study utilizes the FES to assess perceptions of family cohesion.

(such as school and work) are cast into an achievement-oriented or competitive framework". The Intellectual-Cultural Orientation subscale assesses "the degree of interest in political, social, intellectual, and cultural activities". The Active Recreational Orientation subscale assesses "the extent of participation in social and recreational activities". The Moral-Religious Emphasis subscale measures "the degree of emphasis on ethical and religious issues and values". These five subscales comprise the Personal Growth dimensions of the FES (Moos & Moos, 1986).

The Organization subscale measures "the degree of importance of clear organization and structure in planning family activities and responsibilities". Lastly, the Control subscale measures "the extent to which set rules and procedures are used to run family life". These two subscales comprise the System Maintenance dimensions of the FES (Moos & Moos, 1986).

The FES has been selected for this research because of its function in measuring participants' perceptions of their family environment during the first 16 years of life. This will provide data that may give some insight into the association between perceived family environment and the development of perfectionism.

The Relationship dimension of family environments, comprising of Conflict Cohesion, and Expressiveness is considered by Moos and Moos (1986) to be associated with healthiness of temperament and levels of self-esteem among adolescents. The Relationship dimension is considered particularly relevant to this study as it essentially measures characteristics associated with interpersonal relationships. Problems in interpersonal relationships are a fundamental aspect of the model of the development of anorexia and bulimia nervosa theorized in this study (presented above).

### Hypothesis

- In light of previous research (outlined above, e.g., Ordman & Kirschenbaum, 1986; Shisslak et al., 1990) it is hypothesized that women with anorexia nervosa, and women with bulimia nervosa, will score significantly higher on FES Conflict, and significantly lower on FES Cohesion, Expressiveness, Independence and Active-Recreational Orientation than will women with diabetes and healthy women.

### 7.3.8 Correlational Hypotheses

#### Perfectionism Correlations

As perfectionism is the central construct of this study, all hypothesized correlations pertaining to perfectionism are outlined in this section.

- Given their common basis as constructs, it is hypothesized that there will be consistently positive correlations between scores on EDI-2 Perfectionism, SCANS Perfectionism, and all Perfectionism subscales on the MPS (excluding MPS Organization\*).
- As Frost et al. (1990) found MPS Organization to be moderately positively correlated with MPS Personal Standards, it is hypothesized that there will be moderate positive correlations between scores on MPS Organization and MPS Personal Standards.
- Given that the self discipline aspect of asceticism is a fundamental characteristic of perfectionism, it is hypothesized that there will be a

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\* Frost et al. (1990) found MPS Organization to be only weakly correlated with other MPS subscales, except with MPS Personal Standards.

positive correlation between scores on EDI-2 Asceticism and perfectionism measures (except MPS Organization).\*

- In light of the association claimed to exist between depression and perfectionism, it is hypothesized that there will be positive correlations between scores on BDI depression and perfectionism measures. This association is hypothesized to be stronger between BDI depression and MPS Doubts about Actions than between BDI depression and MPS Personal Standards, as Frost et al. (1990) found a moderate association between MPS Doubts about Actions and depression and a weak association between MPS Personal Standards and depression (see Perfectionism Chapter above).
- In light of the relationship considered to exist between perfectionism and HA, it is hypothesized that there will be a moderately positive correlation between scores on TPQ HA and perfectionism measures. Given that HA is related to depression, and that perfectionism is related to depression (outlined above), it is hypothesized that the BDI will be an important covariate in this association.
- Given Cloninger's (1987) finding that medical students who scored high on achievement tests scored higher on TPQ RD than NS and HA, and given the hypothesized association between high achievement and perfectionism (outlined above), it is hypothesized that there will be a moderate or strong positive correlation between scores on TPQ RD and perfectionism measures.

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\* Henceforth, reference to "perfectionism measures" is defined as the EDI-2 Perfectionism dimension, the SCANS Perfectionism dimension, and all perfectionism dimensions on the MPS (except MPS Organization).



- In light of the relationship considered to exist between perfectionism and Persistence, it is hypothesized that there will be moderate or strong positive correlations between scores on TPQ Persistence and perfectionism measures.
- In considering the association between family interaction and perfectionism measures, it is hypothesized that there will be negative correlations between scores on PBI Maternal Care and perfectionism measures, and between PBI Paternal Care and perfectionism measures, and positive correlations between scores on PBI Maternal Protection and perfectionism measures, and between PBI Paternal Protection and perfectionism measures (especially MPS Parental Expectations and Parental Criticism, for all correlations).
- In considering the association between family interaction and perfectionism measures, it is hypothesized that there will be moderate or strong positive correlations between scores on FES Conflict and perfectionism measures, and moderate or strong negative correlations between scores on FES Cohesion and perfectionism measures, between FES Expressiveness and perfectionism measures, and between FES Independence and perfectionism measures.
- As it is likely that FES Achievement Orientation and perfectionism are tapping similar concepts (outlined above), it is hypothesized that there will be moderate or strong positive correlations between scores on FES Achievement Orientation and perfectionism measures.

Table 2 presents the hypothesized correlations for perfectionism measures.

**Table 2.** Hypothesized correlations for perfectionism measures.

	EDI-2 P	SCANS P	MPS Total	MPS CM	MPS PS	MPS PE	MPS PC	MPS D	MPS O
EDI-2 P	1	+	+	+	+	+	+	+	
SCANS P	+	1	+	+	+	+	+	+	
MPS Total	+	+	1	+	+	+	+	+	
MPS CM	+	+	+	1	+	+	+	+	
MPS PS					1				+
MPS PE	+	+	+	+	+	1	+	+	
MPS PC	+	+	+	+	+	+	1	+	
MPS D	+	+	+	+	+	+	+	1	
MPS O					+				1
EDI-2 Asceticism	+	+	+	+	+	+	+	+	
BDI	+	+	+	+	+	+	+	+	
TPQ HA Total	+	+	+	+	+	+	+	+	
TPQ RD Total	+	+	+	+	+	+	+	+	
TPQ Persistence	+	+	+	+	+	+	+	+	
PBI Maternal Care	-	-	-	-	-	-	-	-	
PBI Paternal Care	-	-	-	-	-	-	-	-	
PBI Maternal Protection	+	+	+	+	+	+	+	+	
PBI Paternal Protection	+	+	+	+	+	+	+	+	
FES Conflict	+	+	+	+	+	+	+	+	
FES Cohesion	-	-	-	-	-	-	-	-	
FES Expressiveness	-	-	-	-	-	-	-	-	
FES Independence	-	-	-	-	-	-	-	-	
FES AO	+	+	+	+	+	+	+	+	

**KEY:**

+ = positive correlation  
- = negative correlation

**Abbreviations:**

P = Perfectionism  
CM = Concern over Mistakes  
PS = Personal Standards

PE = Parental Expectations

PC = Parental Criticism

D = Doubts about Actions

O = Organization

Discontent Correlations

- As both the BDI and the General Dissatisfaction dimension of the SCANS are measuring facets of discontent, it is hypothesized that there will be a moderate or strong positive correlation between scores on the BDI and SCANS General Dissatisfaction.
- In light of research associating depression with harm avoidance it is hypothesized that there will be a positive correlation between scores on the BDI and scores on TPQ HA.
- In light of research associating depression with low cohesion and recreational orientation, high conflict and high life stress, it is hypothesized that there will be a positive correlation between scores on the BDI and scores on FES Conflict, and a negative correlation between scores on the BDI and scores on FES Cohesion and Active Recreational Orientation.

Table 3 presents the hypothesized moderate or strong correlations for discontent measures.

Table 3. Hypothesized correlations for discontent measures.

	BDI	SCANS General Dissatisfaction
BDI	1	+
SCANS General Dissatisfaction	+	1
TPQ Harm Avoidance	+	+
FES Conflict	+	+
FES Cohesion	-	-
FES ARO	-	-

KEY:

- + = positive correlation
- = negative correlation

## 7.4 DATA ANALYSES

The data from the 135 respondents for the seven questionnaires were entered into the Apple Macintosh StatView II (Abacus Concepts, 1986) and SAS/Stat Version 6.07 (SAS Institute Inc., 1992) statistical data analyses programmes.

There were four sections to the analyses of data. In the first section data analyses compared the demographic and physical characteristics and descriptive information across the four groups. Also, the means and standard deviations for all variables in this study were compared with those reported by previous researchers. Arguably, similar means and standard deviations among studies, for similar groups of respondents, strengthens the reliability of such findings.

Also in the first section of the data analyses, the null hypothesis ( $H_0$ ) of zero group mean differences across the four groups in the study was tested by one-way Analysis of Variance (ANOVAs) for variables of demographic and physical characteristics, dieting and exercise, age at first menstruation, disordered eating, and the BDI. The Scheffe F-test was used to test for post-hoc group differences. Univariate ANOVAs were not performed for regular binge information, purge information, and cessation of menstruation information, due to low numbers in some groups.

The second section of the data analyses, correlational analysis, was performed in two parts. In part A, correlational analysis was performed between those variables in the study hypothesized to correlate either positively or negatively  $\geq .35$ , for theoretical or empirical reasons (discussed above). Considerable emphasis was placed on those variables considered to be associated with perfectionism measures, as perfectionism

was a primary focus of this study. The other area of focus in part A of the correlational analysis was those variables hypothesized, for theoretical reasons, to correlate moderately or strongly with discontent measures.

The aim of part B of the correlational analysis was to ascertain the association between BDI and all variables on all other instruments in the study, except for EDI-SC.\* These instruments were the EDI-2, TPQ, MPS, SCANS, PBI, and FES. As depression was used as a covariate in this study, a significant relationship between BDI and the dependent variables was an important pre-requisite to using it as a covariate. BDI was selected as a covariate in this study because it was argued (above) that the association between depression and several other measures in the study may be mediated by depression. Thus, depression may be accounting for a large percent of the variance on measures in the study.

In the third section of the data analyses, Multivariate Analysis of Variance (MANOVAs) were performed to determine overall group differences for each of the six instruments in the study with more than one scale. Univariate ANOVAs were subsequently performed on all subscales with significant MANOVAs for the overall scale, with the Scheffe F-test for post-hoc group differences. The null hypothesis being tested in (M)ANOVAs is that the mean vectors for each of the respondent groups are equal.

Significant differences were then examined across groups using BDI as a covariate. It should be noted here that although any variable which theoretically should correlate with the dependent variable(s) is a potential covariate, it is important to select a very reliable covariate, or covariates. If the covariate means are unequal (as is hypothesized in this study), the differences found across groups for the adjusted means is partly a

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\* EDI-SC essentially measures demographic and physical characteristics and descriptive information.

consequence of the reliability of the selected covariate. The covariate selected in this study (BDI) is considered reliable as it is from a highly respected standardized instrument.

The purpose of covariance analysis is to protect against falsely ascribing an effect to a particular variable that should rightly be ascribed to the covariate. The specific aims of covariate analysis are to eliminate systematic bias and to reduce within group or error variance (Stevens, 1986). As Stevens (1986) explained, ideally systematic bias is eliminated from a study by random assignment of respondents to groups. However, in the current study where respondents were assigned to groups according to specific diagnostic criteria (rather than randomly), systematic bias was reduced through covariate analysis. In performing a Multivariate Analysis of Covariance (MANCOVA), the MANOVA results are adjusted in a linear fashion, as the assumption is that a linear relationship exists between the dependent variable and the covariate. Similarly, an ANCOVA adjusts the ANOVA results for linear relationships between dependent variable(s) and the covariate. Thus, covariate analyses adjusts the (M)ANOVA means to what they would be if all groups had scored equally on the covariate (i.e., at the grand mean). Similarly to (M)ANOVAs, the null hypothesis being tested in (M)ANCOVAs is that the adjusted mean vectors for each of the respondent groups are equal.

In the fourth and final section of the data analyses discriminant function analysis (DFA) was performed to identify variables that best discriminated between the eating disordered and non-eating disordered groups in the study, with particular emphasis on perfectionism and family interaction variables. DFA was also performed to identify which combination of variables, from the seven instruments in the study, best discriminated between the eating disordered and non-eating disordered groups.

## CHAPTER EIGHT

### RESULTS

#### 8.1 INTRODUCTION

The first section of the results compares the means and standard deviations found with those reported by previous researchers. This section also presents results for univariate ANOVAs for appropriate demographic, physical and descriptive characteristics, and for the BDI. The second section of the results reports correlational analysis between those variables in the study hypothesized to correlate moderately, or strongly with each other. Also, to test the appropriateness of depression as a covariate, the BDI is correlated with the other variables. The third section of the results presents Multivariate Analyses of Variance and Covariance. Significant differences across groups for one-way Analysis of Variance of subscales are then examined, firstly for original means, and secondly, for adjusted means when using BDI as a covariate. The fourth, and final, section of the results, discriminant function analysis, identifies variables that best discriminate between the eating disordered and non-eating disordered groups.

The results presented for women with diabetes are from the 53 women who completed the full set of questionnaires. Although 69 women with diabetes completed the EDI-SC, EDI-2, and BDI in face-to-face interviews, only 53 women within this group completed and returned the remaining questionnaires in the battery. EDI and BDI means and standard deviations were found to be similar for the original group of 69 women with diabetes and the 53 'completers'. Consequently, the 'completers' group is considered representative of the entire population of women with insulin dependent diabetes, resident in North Canterbury, aged 18 to 30 years inclusive.

## 8.2 SECTION ONE: COMPARISONS WITH OTHER STUDIES AND ANALYSES OF BETWEEN-GROUP DIFFERENCES

### 8.2.1 Comparisons With Other Studies

#### EDI-SC

EDI-SC results are presented in Tables 4 to 8. Scant research has been published reporting findings for the EDI-SC. Consequently, only some of the data reported in Tables 4 to 8 are discussed below.

#### Demographic and Physical Characteristics

Demographic and physical characteristics of the four groups are presented in Table 4 as mean values, standard deviations, ranges and F and p values. Information more appropriately expressed as numbers and percentages is presented in Table 5. As the desired BMI mean (Table 4) of the anorexia nervosa group was skewed by one respondent's desired weight expressed as "0, impossible weight", the mean score of the remaining 24 subjects may be more appropriate i.e., 'Desired BMI'  $M = 15.7$  ( $SD = 2.7$ ,  $R = 12-20$ ).

The BMIs for the anorexia and bulimia nervosa groups (Table 4) closely resemble those of other studies. For example, Gleaves and Eberenz (1993), using the EDI-SC for women with anorexia nervosa, reported BMI,  $M = 15.9$  ( $SD = 1.0$ ). Bulik et al. (1995) reported BMIs at admission for women with anorexia nervosa  $M = 14.8$  ( $SD = 2.0$ ), and women with bulimia nervosa  $M = 22.1$  ( $SD = 2.4$ ). In the same study Bulik et al. reported highest past BMIs for women with anorexia nervosa  $M = 20.2$  ( $SD = 3.1$ ), and for women with bulimia nervosa  $M = 25.5$  ( $SD = 4.4$ ). Lowest past BMIs reported by Bulik et al. (1995) were, for anorexia nervosa,  $M = 14.0$  ( $SD = 2.0$ ), and for bulimia nervosa,  $M = 19.6$  ( $SD = 1.9$ ).



**Table 4.** Demographic and physical characteristics of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Age (years)	23.7 (6.0) [18-35]	24.6 (5.2) [18-40]	21.5 (3.4) [18-28]	23.3 (3.4) [18-29]	2.2	.09
Current Weight (kg)	44.0 <sup>a</sup> (4.0) [34-49]	62.5 <sup>b</sup> (6.7) [54-84]	62.7 <sup>b,c</sup> (9.6) [50-86]	69.0 <sup>c</sup> (10.1) [50-91]	47.2	.0001
Height (meters)	1.7 (0.1) [1.5-1.7]	1.7 (0.1) [1.6-1.8]	1.7 (0.1) [1.5-1.8]	1.6 (0.1) [1.5-1.8]	1.3	.28
BMI (Kg/height in metres <sup>2</sup> )	15.9 <sup>a</sup> (1.6) [13-19]	22.2 <sup>b</sup> (2.8) [19-29]	22.6 <sup>b</sup> (2.9) [19-29]	25.4 <sup>c</sup> (3.3) [19-33]	60.8	.0001
Highest Past BMI	21.5 <sup>a</sup> (4.9) [15-35]	25.8 <sup>b</sup> (4.7) [20-39]	23.0 <sup>a</sup> (2.7) [19-29]	26.0 <sup>b</sup> (3.7) [20-37]	8.6	.0001
Lowest Adult BMI	14.1 <sup>a</sup> (2.0) [12-18]	18.8 <sup>b</sup> (2.4) [14-25]	21.2 <sup>c</sup> (2.6) [19-28]	20.4 <sup>b,c</sup> (2.9) [16-28]	37.9	.0001
Desired BMI	15.0 <sup>a</sup> (4.2) [0-20]	19.6 <sup>b</sup> (2.3) [15-26]	20.6 <sup>b,c</sup> (1.9) [17-24]	21.7 <sup>c</sup> (2.3) [17-27]	33.9	.0001

Values shown as means, standard deviations in parentheses ( ), ranges in parentheses [ ].

Values with different superscripts are significantly different from each other.

In this, and subsequent tables, values are significantly different from each other at <.05.

The BMIs for the healthy group (Table 4) are within the normal range for current BMI, highest past BMI, and lowest adult BMI. The BMIs for the diabetes group are similar to other studies (e.g., Peveler, Fairburn, Boller & Dunger, 1992; Steel et al., 1989). Such studies have reported a tendency for women with diabetes to have slightly higher BMIs than healthy women.

### Descriptive Information

Table 5 presents EDI-SC descriptive information regarding marital status, and dieting, bingeing and purging behaviours.

Table 5. EDI-SC numbers and percentages for descriptive information of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)
Single Marital Status	19 (76)	23 (72)	25 (100)	40 (75)
Ever Dieted	25 (100)	32 (100)	16 (64)	41 (77)
Ever Binged	12 (48)	32 (100)	4 (16)	24 (45)
Ever Vomited (Purged)	11 (46)	27 (84)	2 (8)	9 (17)
Ever used Laxatives	16 (67)	21 (66)	0 (0)	4 (8)
Ever used Diet Pills	6 (24)	14 (44)	0 (0)	5 (9)
Ever used Diuretics	8 (32)	8 (25)	0 (0)	3 (6)

Items are selected from EDI-SC questions A to G.

Percentages shown in parentheses.

The data in Table 5 indicate that at least 72% of the women in each respondent group were single. The finding (Table 5) that all of the women with anorexia and bulimia nervosa had dieted at some stage is consistent with research indicating that a history of dieting is likely to precede the onset of anorexia and/or bulimia nervosa (e.g., Polivy & Herman, 1985; Wolf, 1991). The finding (Table 5) that 64% of the healthy women had ever dieted is consistent with other researchers' findings. For example, Ritchie's (1988) New Zealand study found 66% of female university students had a history of dieting.

Regarding a history of bingeing, the 100% prevalence for the bulimia nervosa group is, by definition, consistent with the literature. The history of bingeing (Table 5) is also consistent with previous research for women with anorexia nervosa (e.g., Johnson & Lewis, 1984), and for women with diabetes (e.g., Stancin & Reuter, 1987).

#### Dieting and Exercising

Table 6 presents EDI-SC mean values, standard deviations and ranges for age of dieters at first diet, and exercise information, by group.

The higher number of exercise times per week for both the anorexia and bulimia nervosa groups compared to both the healthy and diabetes groups (Table 6) is concordant with the literature citing frequent exercise as associated with eating disorders (e.g., Kendler et al., 1991; Pyle et al., 1981).

**Table 6.** EDI-SC diet and exercise means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Dieter's Age at First Diet (years)*	15.3 (3.8) [5-22]	15.1 (2.7) [9-21]	15.9 (1.8) [13-18]	16.3 (3.3) [9-27]	1.0	.39
Exercise Times/Week	7.5 <sup>a</sup> (4.1) [0-14]	7.4 <sup>a</sup> (10.4) [0-59]	3.8 <sup>b</sup> (2.4) [0-10]	3.5 <sup>b</sup> (2.5) [0-10]	5.0	.003
Minutes Exercise/Event	47.4 <sup>a b</sup> (32.8) [0-125]	45.8 <sup>a b</sup> (26.7) [0-120]	31.3 <sup>a</sup> (18.6) [0-60]	51.6 <sup>b</sup> (29.5) [0-175]	3.0	.03
> 75% of Exercise to Control Weight	n=16 64%	n=14 45%	n=7 29%	n=11 21%		

Items are selected from EDI-SC questions A and B.

Values shown as means, standard deviations in parentheses ( ), ranges in parentheses [ ], n= as indicated, or percentages as indicated.

### Bingeing and Purging

Table 7 presents EDI-SC mean values, standard deviations and ranges for binge and purge information by group. Regular bingeing is defined here in accordance with responses on the EDI-SC to "binge eating on a regular basis".

\* This measure does not include all respondents in the study. For n values, see Table 5 "Ever Dieted".

**Table 7.** EDI-SC binge and purge means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), and women with diabetes (D).\*

Variable	AN (N=25)	BN (N=32)	D (N=53)
Regular Binge Age (years)	n=8 17.8 (3.0) [14-22]	n=32 17.2 (4.0) [8-26]	n=17 15.4 (2.1) [12-19]
Worst Average Binges/Week	14.2 (9.8) [4-35]	15.8 (19.0) [3-100]	5.7 (8.5) [1-35]
Age at 1st Vomit -Years	n=11 17.2 (4.5) [13-28]	n=27 18.7 (3.9) [14-28]	n=9 16.7 (3.1) [13-23]
Worst Average Vomits Per Week	n=11 16.2 (14.1) [3-50]	n=27 10.1 (7.5) [2-28]	n=4 12.3 (16.1) [1-35]
Age at 1st Laxative Use - Years	n=15 20.9 (4.6) [13-28]	n=20 21.1 (3.2) [16-27]	n=4 17.5 (2.4) [15-20]
Regular Laxative Age - Years	n=14 20.4 (4.4) [13-28]	n=17 22.0 (3.2) [17-27]	n=1 15.0 (0) [15-15]

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\* The numbers for the healthy group were never >3 for any of these variables and therefore data not reported.

Table 7 continued.

Variable	AN (N=25)	BN (N=32)	D (N=53)
Worst Average Laxatives Per Week	n=13 148.9 (184.5) [7-700]	n=16 57.1 (74.8) [7-250]	n=2 108 (144.3) [6-210]
Worst Average Diet Pills Per Week	n=6 61.3 (51.2) [7-126]	n=10 51.3 (89.7) [5-300]	n=5 53.8 (44.7) [15-105]
Worst Average Diuretics Per Week	n=5 14.6 (19.9) [3-50]	n=6 10.0 (10.2) [2-30]	n=3 14.0 (7.0) [7-21]

Items are selected from EDI-SC questions C to G.

Values shown as means, standard deviations in parentheses ( ), ranges in parentheses [ ].

N.B. Univariate ANOVAs were not performed due to the low numbers in some groups.

Although two healthy women indicated that they had vomited in order to remove food eaten (Table 7) (one on a regular basis) neither had a history of bingeing and therefore had not been eliminated from the study on the basis of potentially having anorexia or bulimia nervosa.

Gleaves and Eberenz (1993), using the EDI-SC for women with anorexia nervosa, reported: Binges/week  $M = 8.4$  ( $SD = 15.4$ ), Vomits/week  $M = 16.6$  ( $SD = 61.9$ ), Laxatives - times/week  $M = 4.5$  ( $SD = 15.9$ ). Although not consistently resembling the findings in Table 7, it can be seen from the standard deviations reported above, and from Gleaves and Eberenz (1993), that women with anorexia nervosa vary widely in their reported levels of bingeing and purging behaviours. The results in Table 7 also indicate wide

variation in bingeing and purging among the bulimia nervosa and diabetes groups.

The ages at which laxative use began for both the anorexia and bulimia nervosa groups (Table 7) are similar to those reported in other studies (e.g., Bulik, Sullivan, Epstein, McKee, Kaye, Dahl & Weltzin, 1992). Unlike Bulik et al. (1992), Table 7 indicated that, of those women who consumed laxatives, the laxative intake of the women with anorexia nervosa exceeded that of the women with bulimia nervosa. Bulik et al.'s findings were the inverse of this. However, Bulik et al.'s findings do not extrapolate well to the current study as Bulik et al. reported "laxatives per week" (presumably at the time of the study) as opposed to the current study reporting "worst average laxatives per week". Similarly to Bulik et al. (1992), anorexia and bulimia nervosa groups do not appear to be greatly different from each other in levels of diuretic use.

Table 8 presents EDI-SC mean values, standard deviations and ranges for menstruation information by group. The ages at first menstruation for all groups (Table 8) closely resemble those found in other studies. For example, Levine and Smolak (1992) reported the average age of menarche to be 12.75 years with the on-time range 11.5 to 13 years. Mean results of this research, although similar to those of Levine and Smolak, indicate delayed menarche in some respondents, as late as 19 years. It appears from the findings in Table 8 that age at first menstruation is not associated with eating disorder status. The other menstruation data (Table 8) appear to be in accordance with the diagnostic status for each group.

**Table 8.** EDI-SC menstruation means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Ever Mst? - Yes	n=25 100%	n=32 100%	n=25 100%	n=53 100%		
Age at First Mst - Years	13.0 (1.8) [11-18]	13.2 (1.9) [10-19]	12.2 (1.3) [9-16]	13.2 (1.6) [10-17]	2.4	.07
Mst Regular? - Yes	n=12 48%	n=30 97%	n=23 92%	n=51 96%		
*Missed Mst > 3 mths. - Yes	n=25 100%	n=16 52%	n=2	n=24 45%		
*Age First Missed Mst - Years	18.4 (3.9) [14-28]	19.1 (3.4) [15-25]		16.6 (3.4) [12-25]		
*Months Missed Mst	25.8 (34.4) [3-132]	11.6 (9.1) [3-24]		8.7 (8.1) [3-36]		
*Weight Ceased (kg)	47.1 (4.4) [37-57]	50.6 (6.5) [38-63]		57.8 (13.3) [32-92]		

Items are selected from EDI-SC question H.

Key: Mst = Menstruation

Values shown as means, standard deviations in parentheses ( ), ranges in parentheses [ ], n= as indicated, or percentages as indicated.

\*Univariate ANOVAs were not performed due to the low numbers in some groups.



EDI-2

Table 9 presents mean values, standard deviations and ranges for EDI-2 subscales by group.

Table 9. EDI-2 means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Drive for Thinness	14.9 <sup>a</sup> (5.4) [1-21]	15.1 <sup>a</sup> (5.7) [1-21]	4.3 <sup>b</sup> (3.8) [0-11]	5.4 <sup>b</sup> (5.3) [0-20]	41.2	.0001
Bulimia	4.0 <sup>a</sup> (5.9) [0-21]	8.8 <sup>b</sup> (5.7) [1-20]	1.0 <sup>a</sup> (1.5) [0-6]	1.5 <sup>a</sup> (2.1) [0-9]	26.6	.0001
Body Dissatisfaction	19.0 <sup>a</sup> (6.5) [3-27]	21.0 <sup>a</sup> (4.2) [13-27]	11.5 <sup>b</sup> (8.7) [0-25]	12.2 <sup>b</sup> (7.9) [0-27]	14.9	.0001
Ineffectiveness	15.8 <sup>a</sup> (8.0) [2-30]	12.2 <sup>a</sup> (5.1) [2-21]	1.9 <sup>b</sup> (3.2) [0-12]	2.8 <sup>b</sup> (5.7) [0-24]	45.7	.0001
Perfectionism	10.6 <sup>a</sup> (4.2) [4-18]	8.0 <sup>a</sup> (4.5) [1-18]	3.9 <sup>b</sup> (3.7) [0-12]	5.0 <sup>b</sup> (4.9) [0-17]	12.7	.0001
Interpersonal Distrust	7.9 <sup>a</sup> (4.0) [1-17]	7.4 <sup>a</sup> (3.8) [0-14]	2.3 <sup>b</sup> (3.4) [0-13]	2.1 <sup>b</sup> (2.6) [0-13]	29.8	.0001
Interoceptive Awareness	14.0 <sup>a</sup> (7.6) [0-29]	12.2 <sup>a</sup> (5.9) [1-29]	3.2 <sup>b</sup> (3.4) [0-12]	2.9 <sup>b</sup> (4.8) [0-27]	36.7	.0001

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Table 9. continued.

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Maturity Fears	6.6 <sup>a</sup> (5.9) [0-21]	4.8 <sup>a,b</sup> (3.9) [0-15]	2.7 <sup>b</sup> (2.6) [0-12]	3.1 <sup>b</sup> (3.8) [0-15]	5.2	.002
Asceticism	11.2 <sup>a</sup> (5.3) [3-21]	9.8 <sup>a</sup> (5.6) [2-21]	3.1 <sup>b</sup> (2.1) [0-8]	4.3 <sup>b</sup> (3.2) [0-15]	27.5	.0001
Impulse Regulation	8.1 <sup>a</sup> (6.0) [0-20]	7.1 <sup>a</sup> (4.4) [0-18]	2.2 <sup>b</sup> (3.2) [0-13]	2.7 <sup>b</sup> (4.2) [0-18]	14.4	.0001
Social Insecurity	11.1 <sup>a</sup> (3.5) [1-16]	9.5 <sup>a</sup> (3.4) [2-17]	2.3 <sup>b</sup> (2.6) [0-11]	3.7 <sup>b</sup> (4.1) [0-16]	42.2	.0001

Values shown as means, standard deviations in parentheses ( ), ranges in parentheses [ ].

Values with different superscripts are significantly different from each other.

For the anorexia nervosa group, the findings (Table 9) closely resemble other studies on the subscales Drive for Thinness, Bulimia, Body Dissatisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness and, Maturity Fears (e.g., Garner, 1991; Gleaves & Eberenz, 1993). As the Asceticism, Impulse Regulation, and Social Insecurity subscales are recent additions to the EDI (EDI-2; Garner, 1991), the only published means and standard deviations found for comparison were Garner's 1991 norms.\* The means in Table 9 for the anorexia nervosa group are slightly higher on these three subscales than for Garner (1991).

\* Recently published studies (e.g., Gleaves & Eberenz, 1993) have used the original EDI. Although Garner et al. (1992) presented EDI-2 means and standard deviations for women with anorexia and bulimia nervosa this was specifically for anorexia and bulimia nervosa sub-groups with high body dissatisfaction scores.

For the bulimia nervosa group, the findings in this study closely resemble those of other studies for Drive for Thinness, Bulimia, Body Dissatisfaction, Perfectionism, and Maturity Fears (e.g., Garner, 1991; Williamson et al., 1993). Ineffectiveness, for the bulimia nervosa group (Table 9), although similar to Garner's (1991) norms,  $M = 11.0$  ( $SD = 7.5$ ), is dissimilar to findings of studies including women with normal weight bulimia nervosa, e.g., Williamson et al. (1993)  $M = 6.4$  ( $SD = 3.7$ ). However, as reported means for Ineffectiveness have varied widely, e.g., Thompson, Berg and Shatford (1987)  $M = 3.5$  ( $SD = 4.8$ ), perhaps the Ineffectiveness subscale is not a robust measure. Interpersonal Distrust for the bulimia nervosa group (Table 9) is considerably higher than for other studies, e.g., Garner (1991)  $M = 5.3$  ( $SD = 4.5$ ), Williamson et al. (1993)  $M = 3.4$  ( $SD = 3.0$ ), Thompson et al. (1987)  $M = 2.5$  ( $SD = 4.2$ ). As with Ineffectiveness, the wide variety of reported scores may indicate a less robust measure than scales with more similar scores across studies. A similar situation was found with Interoceptive Awareness score variation, e.g., Table 9  $M = 12.2$  ( $SD = 5.9$ ), Garner (1991)  $M = 11.1$  ( $SD = 6.8$ ), Thompson et al. (1987)  $M = 3.3$  ( $SD = 1.9$ ). For the newer subscales of Asceticism, Impulse Regulation and Social Insecurity, Garner's (1991) findings for women with bulimia nervosa are similar to those tabled here.

For the healthy group, the findings in this study were similar to other reported findings on all subscales (e.g., Garner, 1991; Thompson et al., 1987; Williamson et al., 1993). Although some variation exists on some subscales, e.g., Garner (1991) Perfectionism  $M = 6.2$  ( $SD = 3.9$ ), Thompson et al. (1987)  $M = 3.9$  ( $SD = 2.7$ ), scores reported in Table 9,  $M = 3.9$  ( $SD = 3.7$ ) are within the ranges of variation reported.

For the diabetes group, the findings in this study were similar on the subscales Drive for Thinness, Bulimia, Body Dissatisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness and,

Maturity Fears, to other reported findings (e.g., Marcus et al., 1992). No studies of diabetes groups were located for the more recently added scales of Asceticism, Impulse Regulation and Social Insecurity.

### Disordered Eating Index

In addition to comparing groups across individual subscales of the EDI-2 Pike and Rodin (1991) constructed a measure of disordered eating (Disordered Eating Index) by summing three subscales of the EDI-2, Drive for Thinness, Bulimia, and Body Dissatisfaction. Pike and Rodin's rationale for the Disordered Eating Index is that the three relevant subscales measure the most fundamental aspects of weight preoccupation and diet concern of anorexia and bulimia nervosa. According to Pike and Rodin (1991), disordered eating is measured as scores in the 75th percentile or higher on the Disordered Eating Index. The comparison group defined by Pike and Rodin (1991) were those scoring in the 10th-35th percentiles on the Disordered Eating Index. Table 10 presents mean values, standard deviations and ranges for Disordered Eating Index by group.

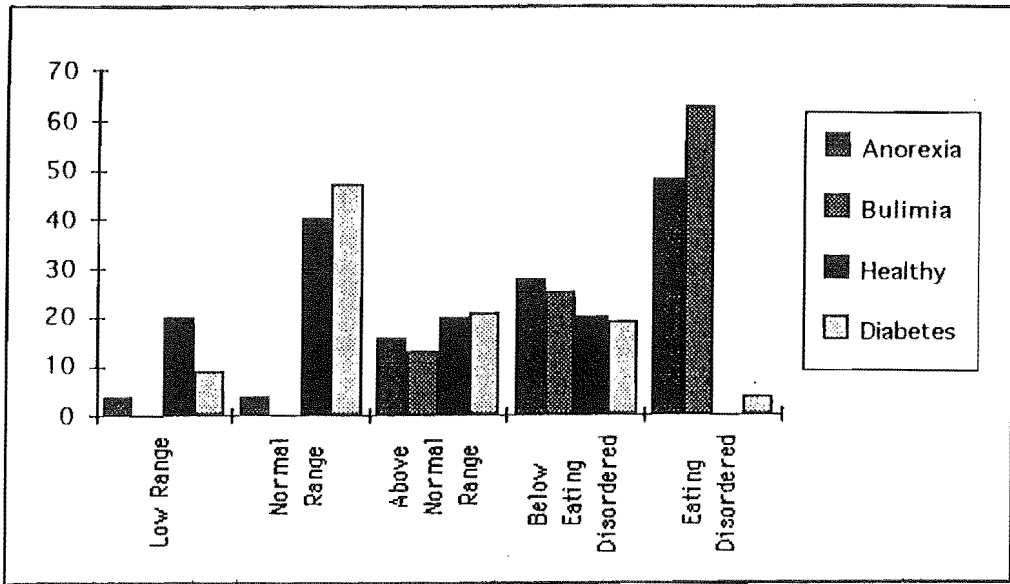
Table 10. Disordered Eating Index means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Mean	37.9 <sup>a</sup>	44.9 <sup>a</sup>	16.8 <sup>b</sup>	19.0 <sup>b</sup>	38.5	.0001
SD	14.3	12.5	12.0	12.7		
Range	4-65	21-66	1-35	1-54		

Values with different superscripts are significantly different from each other.

### Eating Disorder Categories

Eating disorder scores were broken down into categories of severity of eating disorder and presented in Figure 2 as percentages in each category by group.



**Figure 2:** Percentages in eating disorder categories by group.

### BDI

The level of depression for each subject was measured by the BDI. Table 11 presents mean values, standard deviations and ranges for BDI scores by group.

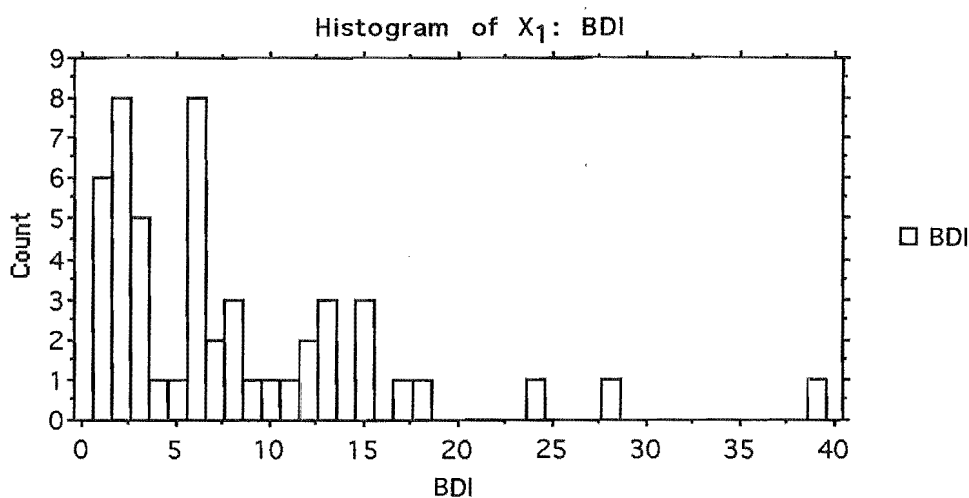
**Table 11.** BDI means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Mean	29.7 <sup>a</sup>	22.8 <sup>b</sup>	4.8 <sup>c</sup>	7.5 <sup>c</sup>	65.2	.0001
SD	10.9	9.0	3.7	7.6		
Range	10-46	10-44	0-12	0-39		

Values with different superscripts are significantly different from each other.

For the anorexia nervosa group, BDI scores (Table 11) are similar to, but higher than, those of previous studies. For example, Strauss and Ryan (1987) reported  $M = 25.0$  ( $SD = 10.8$ ,  $R = 10-46$ ) for anorexic restrictors and  $M = 24.8$  ( $SD = 12.6$ ,  $R = 3-48$ ) for anorexic bulimics. Steiner (1990) reported  $M =$

14.9 (SD = 8.7) for anorexic restrictors and  $M = 17.1$  (SD = 9.9) for anorexic bulimics. For the bulimia nervosa, healthy, and diabetes groups, BDI scores (Table 11) are similar to those of some previous studies. For example, for bulimia nervosa, Strauss and Ryan (1988) reported  $M = 21.5$  (SD = 7.8), and Mizes (1988) reported  $M = 20.85$  (SD = 14.85). Range scores were not reported. However, Steiner (1990) reported bulimia nervosa  $M = 18.6$  (SD = 10.7), being lower than in the current study. For healthy individuals, Strauss and Ryan (1987) reported  $M = 3.6$  (SD = 2.8,  $R = 0-9$ ), and Mizes (1988) reported  $M = 4.9$  (SD = 6.0). For individuals with insulin dependent diabetes, Littlefield et al. (1990) reported  $M = 8.1$  (SD = 6.2,  $R = 0$  to 26). The upper end of this range is somewhat lower than reported in Table 11 (0-39). However, frequency distribution scores indicate the upper BDI score for the diabetes group in this study to be an outlier, the second highest score being 28 (see Figure 3 below).



**Figure 3:** BDI frequency distribution of scores for women with diabetes.

### BDI Categories

BDI scores were broken down into categories of severity of depression and presented in Figure 4 as percentages in each category by group. Categories are normal range (scores 0-9), mild depression (scores 10-15), mild-moderate

depression (scores 16-19), moderate-severe depression (scores 20-29), and, severe depression (scores 30-63) (Beck et al., 1979).

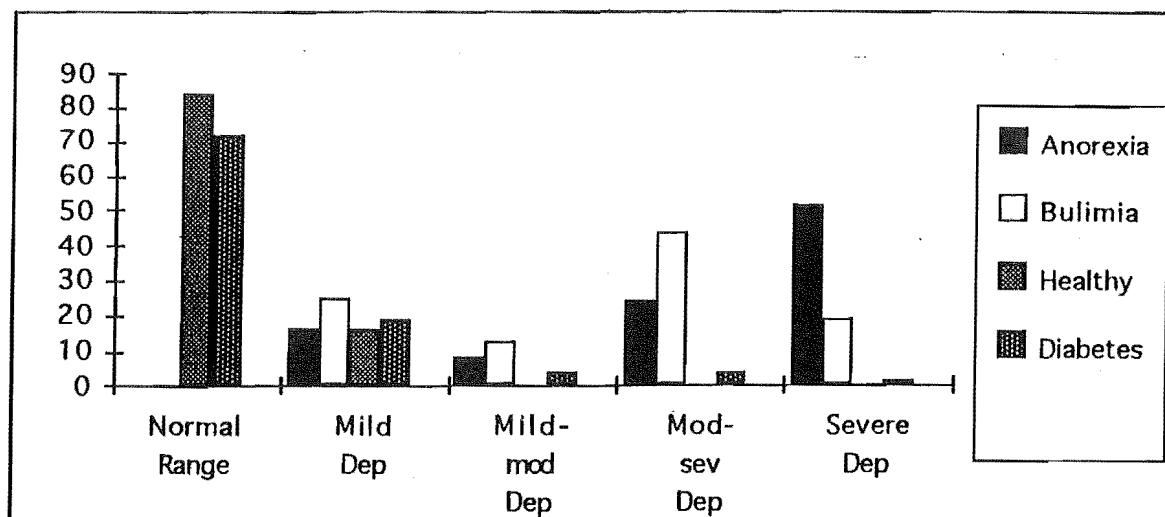


Figure 4: Percentages in BDI categories by group.

It can be seen from Figure 4 that all participants with eating disorders suffered depression of at least mild severity, while all healthy women were either not depressed or mildly depressed. The diabetes group had the widest range of depression scores because, although most such women scored within the normal range, some suffered from mild depression and a few from moderate or severe depression.

### MPS

Table 12 presents mean values, standard deviations and ranges for MPS subscales by group. The only published studies using the MPS for anorexia nervosa are not ideal for comparison with this study as one included an anorexia nervosa group of only 11 respondents (Bastiani et al., 1995), and the other, rather than including women with a "current" diagnosis of anorexia nervosa, included women at least 12 months recovered from symptoms of anorexia nervosa (Srinivasagam et al., 1995). Further, both studies may not be independent, and included three authors in common.

**Table 12.** MPS means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
MPS Total	113.4 <sup>a</sup> (17.4) [63-145]	100.7 <sup>a</sup> (14.3) [69-122]	62.2 <sup>b</sup> (14.1) [41-98]	69.8 <sup>b</sup> (19.8) [30-125]	60.0	.0001
Concern over Mistakes	36.8 <sup>a</sup> (7.0) [17-45]	33.1 <sup>a</sup> (5.4) [19-43]	17.4 <sup>b</sup> (5.0) [10-29]	20.2 <sup>b</sup> (8.2) [9-42]	58.5	.0001
Personal Standards	30.0 <sup>a</sup> (2.79) [24-35]	28.2 <sup>a</sup> (4.53) [19-35]	19.1 <sup>b</sup> (4.68) [11-29]	21.5 <sup>b</sup> (5.9) [8-33]	32.9	.0001
Parental Expectations	16.4 <sup>a</sup> (5.5) [5-25]	14.0 <sup>a,b</sup> (4.7) [6-25]	10.1 <sup>c</sup> (4.8) [5-20]	11.2 <sup>b,c</sup> (4.4) [5-24]	10.0	.0001
Parental Criticism	14.4 <sup>a</sup> (4.4) [4-20]	11.1 <sup>b</sup> (3.8) [4-20]	6.2 <sup>c</sup> (3.2) [4-16]	7.5 <sup>c</sup> (3.6) [4-20]	27.9	.0001
Doubts about Actions	15.9 <sup>a</sup> (3.5) [7-20]	14.2 <sup>a</sup> (3.0) [7-20]	9.4 <sup>b</sup> (3.4) [5-19]	9.5 <sup>b</sup> (3.9) [4-20]	27.4	.0001
Organization	24.3 (4.5) [11-30]	22.8 (5.7) [11-30]	23.6 (4.5) [16-30]	23.9 (5.3) [12-30]	0.5	.70

Values shown as means, standard deviations in parentheses ( ), ranges in parentheses [ ].

Values with different superscripts are significantly different from each other.



For the anorexia nervosa group, the means and standard deviations found in the current study on the subscales of Parental Expectations and Parental Criticism (Table 12) differed by no more than one digit from those found by Srinivasagam et al. (1995), but were considerably different to those reported by Bastiani et al. (1995).<sup>\*</sup> Bastiani et al. (1995) reported  $M = 11$  ( $SD = 6$ ) for Parental Expectations, and  $M = 9$  ( $SD = 5$ ) for Parental Criticism, these scores being five digits less than found in this study on both subscales. For the MPS Total, Concern Over Mistakes, Personal Standards, and Doubts about Actions, the findings in this study, although slightly higher, more closely resemble those of Bastiani et al. (1995) than Srinivasagam et al. (1995). However, the means and standard deviations did not vary greatly between the two previous studies on these subscales. Similarly, the Organization subscale means and standard deviations in this study were similar to those of the two previous studies.

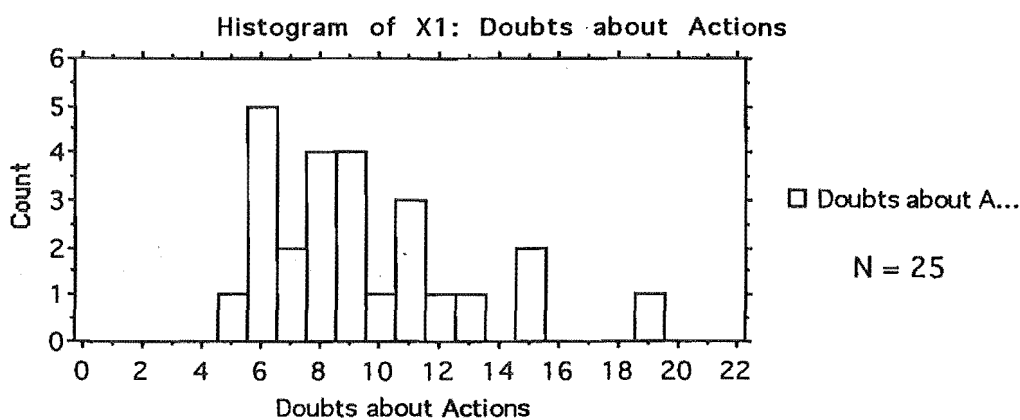
For the healthy group, the means and standard deviations in Table 12 closely resemble those reported by Bastiani et al. (1995) and Srinivasagam et al. (1995) on the MPS subscales of Concern Over Mistakes, Personal Standards, Parental Expectations and Parental Criticism. On both the Doubts about Actions and Organization subscales the means in this study were three to four digits higher than those reported by Bastiani et al. (1995) and Srinivasagam et al. (1995). For example, Doubts about Actions Table 12  $M = 9.4$  ( $SD = 3.4$ ), Bastiani et al. (1995)  $M = 6$  ( $SD = 2$ ), and Srinivasagam et al. (1995)  $M = 6$  ( $SD = 3$ ). Thus, for MPS Doubts about Actions and Organization, the differences in mean values between the anorexia nervosa and healthy groups are slightly less in this study than for previous studies. The MPS Total means and standard deviations for healthy women are similar in all three studies.

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<sup>\*</sup> Bastiani et al.'s (1995) study has been criticized above as including too few respondents with anorexia nervosa ( $n = 11$ ) for reliable statistical analysis.

As no reported studies appear to have used the MPS specifically with individuals suffering from bulimia nervosa or diabetes, no comparisons can be made with previous research for these groups of women.

As the highest range scores for Doubts about Actions (Table 12) were almost equal across all four groups, a frequency distribution was formed (Figure 5) to assess if the higher scores in the healthy group were outliers.



**Figure 5:** MPS Doubts about Actions frequency distribution of scores for healthy women.

Frequency distribution scores (Figure 5) indicate that, with the exception of one case, all MPS Doubts about Actions scores in the healthy group ranged from 5 to 15, with scores for all but five cases ranging from 5 to 11.

### Perfectionism Categories

MPS Total perfectionism scores were broken down into categories of levels of perfectionism and presented in Figure 6 as percentages in each category by group. Perfectionism categories are: very low (scores 0-39), low (scores 40-59), medium (scores 60-79), high (scores 80-99), and, very high (scores 100-145). These categories were devised in the current study from examination of the distribution of scores across the four groups.

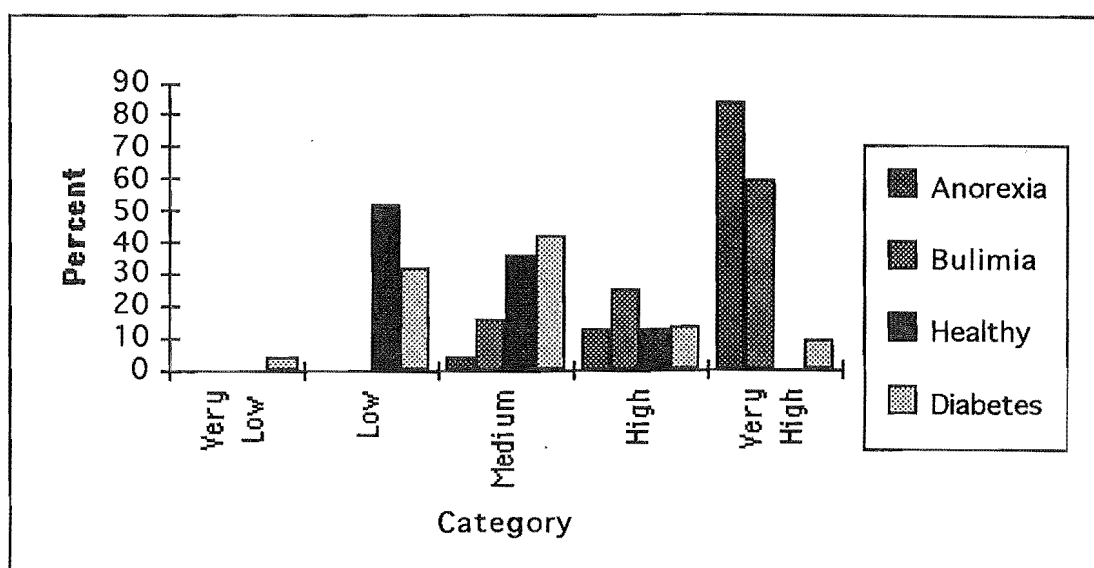


Figure 6: Percentages in perfectionism categories by group.

It can be seen from Figure 6 that the diabetes group had the widest range of MPS Total Perfectionism scores, ranging from very low to very high perfectionism, whereas the healthy group scores ranged from low to high perfectionism. Anorexia and bulimia nervosa groups scores ranged from medium to very high perfectionism. No participants with eating disorders were in the very low or low perfectionism categories. Participants in the very high perfectionism category were 84% with anorexia nervosa, 59% with bulimia nervosa, 0% of healthy women, and 5% with diabetes.

### SCANS

As the name implies, SCANS (Setting Conditions for Anorexia Nervosa Scale) was designed as a screening instrument for anorexia nervosa (Slade & Dewey, 1986). It is also intended to screen for bulimia nervosa. Table 13 presents mean values, standard deviations and ranges for SCANS scores by group.

Slade and Dewey (1986) did not differentiate between anorexia nervosa and bulimia nervosa groups in their reported means and standard deviations: General Dissatisfaction  $M = 52.2$  ( $SD = 8.8$ ) and Perfectionism  $M = 31.2$  ( $SD =$

4.7). In comparing these results with those in Table 13, it can be seen that they closely resemble those of both the anorexia and bulimia nervosa groups. Further means and standard deviations reported by Slade et al. (1991) also resemble those presented here. For the healthy group, the findings in the current study were similar to those reported for Slade and Dewey's (1986) female student controls: General Dissatisfaction  $M = 35.7$  ( $SD = 7.1$ ), and Perfectionism  $M = 23.6$  ( $SD = 4.1$ ). Slade et al. (1991) reported similar findings. No reported studies, to date, appear to have used the SCANS specifically for individuals with diabetes. Of note, the findings for participants with diabetes reported in Table 13 much more closely resemble the healthy group than either eating disordered group.

**Table 13.** SCANS mean values, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
General Dissatisfaction	56.2 <sup>a</sup> (8.8) [37-70]	54.0 <sup>a</sup> (6.5) [41-68]	36.0 <sup>b</sup> (5.5) [27-47]	37.9 <sup>b</sup> (10.4) [22-62]	47.6	.0001
Perfectionism	31.8 <sup>a</sup> (3.8) [26-38]	30.2 <sup>a,b</sup> (5.8) [16-38]	25.4 <sup>c</sup> (2.8) [21-31]	28.4 <sup>b</sup> (4.1) [19-38]	10.2	.0001

Values shown as means, standard deviations in parentheses ( ), ranges in parentheses [ ].

Values with different superscripts are significantly different from each other.

### SCANS Cut-Off Scores

Slade et al. (1990) suggested cut-off scores for SCANS General Dissatisfaction of 42+ and Perfectionism of 24+, in conjunction, above which eating disorder psychopathology is more likely to exist. It can be seen in Table 13 that, on the General Dissatisfaction subscale, mean scores for the anorexia and bulimia nervosa groups are above the cut-off scores for eating disorder

psychopathology, whereas mean scores for the healthy and diabetes groups are below these cut-off scores. However, mean scores on the Perfectionism subscale do not differentiate between groups on the basis of cut-off scores.

From examining individual participant's scores, Slade et al. (1990) found 87% of women with anorexia or bulimia nervosa, compared to 8% of normal women controls, scored above the suggested cut-off scores of SCANS General Dissatisfaction of 42+ and Perfectionism of 24+, in conjunction. The numbers and percentages of women in this study scoring above the cut-off scores is presented for each group in Table 14. To examine which of the two subscales appears to be contributing most to the discrimination across groups, scores are presented separately for General Dissatisfaction of 42+ and Perfectionism of 24+.

**Table 14.** Numbers and percentages scoring above SCANS cut-off scores of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

SCANS	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)
General Dissatisfaction 42+ & Perfectionism 24+	22 (88)	27 (84)	4 (16)	13 (25)
General Dissatisfaction 42+	22 (88)	31 (97)	17 (68)	16 (30)
Perfectionism 24+	25 (100)	28 (88)	4 (16)	49 (92)

Percentages shown in parentheses.

It can be seen in Table 14 that 88% of women with anorexia nervosa and 84% of women with bulimia nervosa, compared to 16% of healthy women and 25% of women with diabetes, scored above the combined cut-off scores

suggested by Slade et al. (1990). Thus, General Dissatisfaction and Perfectionism scores in conjunction provide greater discrimination between eating disordered and non-eating disordered women than do either General Dissatisfaction or Perfectionism scores alone.

### TPQ

Table 15 presents mean values, standard deviations and ranges for TPQ subscales by group. Whereas this study combined restrictor and bulimic anorexia nervosa subtypes, previous studies did not. Hence, this must be considered when comparisons are made. For the anorexia nervosa group, on the NS1, NS3 and NS4 subscales, the findings in Table 15 are similar to previous studies for restrictor and bulimic subtypes (Brewerton et al., 1993; Bulik et al., 1995). On the NS2 subscale, the findings (Table 15) are similar to previous studies for anorexia nervosa restrictor subtype. However, this is considerably lower than reported by Brewerton et al. (1993) for women with comorbid anorexia and bulimia nervosa,  $M = 4.5$  ( $SD = 2.5$ ), yet only slightly lower than reported by Bulik et al. (1995)  $M = 2.9$  ( $SD = 1.7$ ) for such women. This has a similar effect on the NS Total. The NS Total score for the anorexia nervosa group in the current study is also similar to that reported by Kleifield, Sunday, Hurt and Halmi (1994) for anorectic-restrictors:  $M = 13.0$  ( $SD = 5.8$ ). Kleifield et al. (1994) did not report subscale scores.

On all HA subscales and the HA Total (Table 15) the anorexia nervosa group means closely resemble those reported by Bulik et al. (1995) for women with comorbid anorexia and bulimia nervosa, and are slightly higher than those of Brewerton et al., (1993). The greatest discrepancy is on the HA1 subscale: Table 15  $M = 8.6$  ( $SD = 1.9$ ) and Brewerton et al.  $M = 5.3$  ( $SD = 2.3$ ). Results in Table 15 are also slightly higher on all HA subscales than the same researchers reported for women with anorexia nervosa restrictor subtype.

**Table 15.** TPQ means, SDs, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy (H), and diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Novelty Seeking Total	12.6 <sup>a</sup> (6.7) [2-28]	15.0 <sup>a,b</sup> (4.8) [2-24]	16.6 <sup>a,b</sup> (3.0) [10-23]	17.3 <sup>b</sup> (5.7) [6-27]	4.9	.003
NS1: Exploratory Excitability	3.5 (2.2) [0-8]	3.7 (2.0) [0-7]	4.6 (1.8) [1-7]	4.8 (1.9) [1-8]	3.7	.01
NS2: Impulsivity	1.6 <sup>a</sup> (1.7) [0-5]	2.3 <sup>a,b</sup> (1.3) [0-7]	3.0 <sup>b</sup> (1.7) [0-6]	3.1 <sup>b</sup> (2.2) [0-8]	4.9	.003
NS3: Extravagance	3.0 <sup>a</sup> (2.1) [0-7]	4.2 <sup>a,b</sup> (2.1) [0-7]	4.6 <sup>a,b</sup> (1.5) [2-7]	4.5 <sup>b</sup> (1.9) [1-7]	3.7	.01
NS4: Disorderliness	4.5 (2.4) [1-9]	4.8 (1.9) [0-8]	4.4 (2.0) [2-8]	5.0 (2.1) [0-8]	0.5	.66
Harm Avoidance Total	25.1 <sup>a</sup> (4.3) [15-31]	24.8 <sup>a</sup> (4.5) [16-31]	14.8 <sup>b</sup> (6.7) [5-29]	17.2 <sup>b</sup> (7.7) [4-33]	20.9	.0001
HA1: Anticipatory Worry	8.6 <sup>a</sup> (1.9) [3-10]	7.7 <sup>a</sup> (1.6) [3-10]	3.7 <sup>b</sup> (2.5) [0-8]	4.5 <sup>b</sup> (2.8) [0-10]	32.0	.0001
HA2: Fear of Uncertainty	5.4 <sup>a,c</sup> (1.4) [3-7]	5.7 <sup>a</sup> (1.3) [3-7]	4.2 <sup>b,c</sup> (2.2) [0-7]	4.7 <sup>a,c</sup> (2.0) [1-7]	4.0	.009

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Table 15. continued

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
HA3: Shyness	5.6 <sup>a</sup> (1.4) [3-7]	5.3 <sup>a</sup> (1.9) [0-7]	3.1 <sup>b</sup> (2.1) [0-7]	3.4 <sup>b</sup> (2.3) [0-7]	11.9	.0001
HA4: Fatiguability	5.5 <sup>a,c</sup> (2.3) [1-8]	6.2 <sup>a</sup> (2.6) [0-10]	3.8 <sup>b,c</sup> (2.4) [0-9]	4.5 <sup>a,c</sup> (2.9) [0-10]	4.7	.004
Reward Dependence Total	12.0 <sup>a</sup> (2.7) [7-16]	11.9 <sup>a</sup> (3.9) [4-21]	14.9 <sup>b</sup> (3.1) [6-20]	14.8 <sup>b</sup> (3.2) [7-20]	8.8	.0001
RD1: Sentimentality	3.8 (1.2) [1-5]	3.6 (1.3) [1-5]	3.9 (1.2) [0-5]	4.0 (0.9) [2-5]	0.7	.54
RD2: Attachment	4.9 <sup>a</sup> (1.9) [2-8]	4.9 <sup>a</sup> (2.7) [1-11]	8.4 <sup>b</sup> (2.0) [4-11]	7.7 <sup>b</sup> (2.4) [1-11]	19.7	.0001
RD3: Dependence	3.3 (0.9) [2-5]	3.3 (1.4) [1-5]	2.6 (1.3) [1-5]	3.1 (1.5) [0-5]	2.0	.12
Persistence	6.6 <sup>a</sup> (1.2) [5-9]	5.8 <sup>a,b</sup> (1.7) [3-9]	4.4 <sup>c</sup> (1.9) [2-8]	5.2 <sup>b,c</sup> (1.8) [1-8]	8.0	.0001

Values shown as means, standard deviations in parentheses ( ), ranges in parentheses [ ].

Values with different superscripts are significantly different from each other.



On all RD subscales (Table 15) the anorexia nervosa group means generally resemble those reported by Bulik et al. (1995) and Brewerton et al. (1993) for both anorexia nervosa restrictor subtype, and comorbid anorexia and bulimia nervosa. The only exception is that for women with anorexia nervosa restrictor subtype Bulik et al. reported a higher RD3  $M = 7.8$  ( $SD = 1.9$ ), and consequently a slightly higher RD Total than in this study. The RD Total for the anorexia nervosa group in the current study resembles that reported by Kleifield et al. (1994). The Persistence Dimension (Table 15) for the anorexia nervosa group is similar to that reported by Kleifield et al. (1994), and as a RD subscale by Bulik et al. (1995) and Brewerton et al. (1993) (using the former version of the TPQ).

For the bulimia nervosa group, the NS3 and NS4 subscale means in Table 15 are similar to other reported findings (Brewerton et al., 1993; Bulik et al., 1995). However, the NS1 and NS2 subscale means (Table 15) are slightly lower than for other studies. The greatest discrepancy for NS1 is that Bulik et al., (1995) reported  $M = 5.3$  ( $SD = 2.1$ ) compared to  $M = 3.7$  ( $SD = 2.0$ ) in the current study. Hence, the NS Total mean in this study is slightly lower than reported for other studies, including Kleifield et al. (1994)  $M = 17.1$  ( $SD = 4.9$ ). On all HA measures, the means reported in Table 15 for the bulimia nervosa group, although slightly higher, are similar to those reported by previous studies (Brewerton et al., 1993; Bulik et al., 1995). On all RD measures, and the Persistence Dimension, the bulimia nervosa group means (Table 15) are similar to those of previous studies (Brewerton et al., 1993; Bulik et al., 1995).

For the healthy group, the findings in Table 15 are similar on all NS, HA and RD subscales, and the Persistence Dimension, to those reported by previous researchers (Cloninger, Przybeck & Svrakic, 1991; Svrakic, Przybeck & Cloninger, 1991). These two studies, which provided the only published

healthy control means located for single TPQ subscales,\* are not ideal for comparison with the current study as the mean age of the US white female sample in Cloninger et al.'s (1991) norms is 45.3 years compared to  $M = 20.7$  ( $R = 18-27$ ) in this study. Svrakic et al. (1991), in addition to reproducing Cloninger et al.'s norms, provided means and standard deviations for a sample of Yugoslav female students ( $M$  age = 23.5 years,  $R = 20-33$ ), not culturally matched, but similar in age to the women in this study sample.

Of note, on all NS and HA subscales the results for the healthy group (Table 15) more closely resemble those of Svrakic et al.'s Yugoslav sample (1991) than Cloninger et al.'s US white norms (1991). Healthy women NS Total  $M = 16.6$  for this study, compared to 16.6 (Svrakic et al., 1991), and 13.0 (Cloninger et al., 1991). Moreover, Kleifield et al. (1994) reported a healthy group NS Total  $M = 16.1$  for women aged 24.7 years on average (No subscale scores were provided). This raises the question of whether NS and HA are age-related personality dimensions, which decrease with age. Indeed, Cloninger (1987) claimed age to be a feature of the biosocial model of personality. Cloninger (1991) claimed that on average NS scores decrease by one point per decade. However, Cloninger's model claimed HA to slightly increase with age, the reverse of the comparison to the healthy group in this study with Svrakic et al.'s Yugoslav sample (1991) and Cloninger et al.'s US white norms (1991).

As no reported studies appear to have used the TPQ specifically for persons with diabetes, no comparisons are made with such research. However, of note, the findings for the diabetes group in the current study (Table 15) closely resemble those for the healthy group on all NS and RD subscales. Similar to the healthy group in this study, on all NS subscales the diabetes group more closely resemble Svrakic et al.'s (1991) Yugoslav sample than

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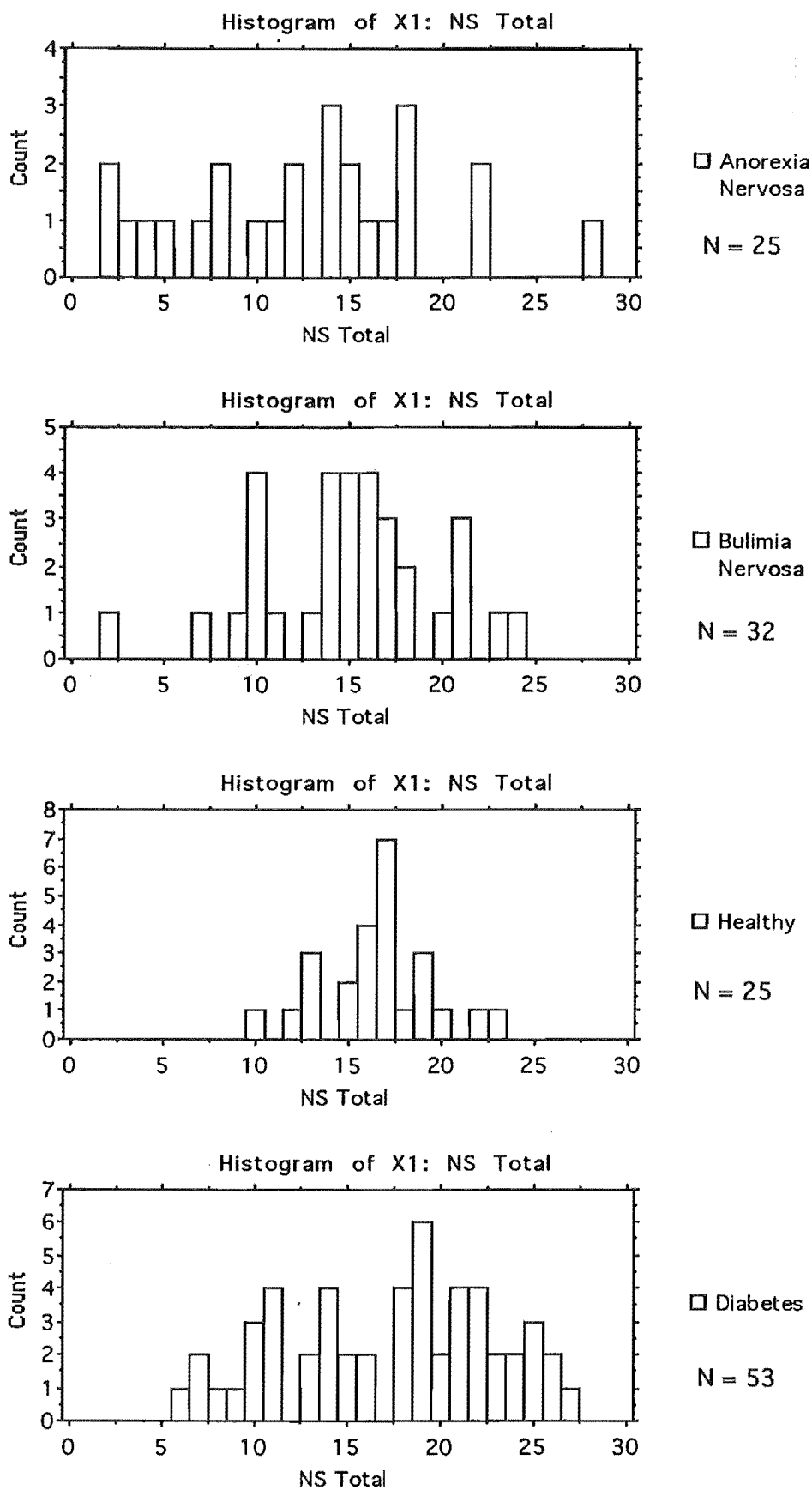
\* Brewerton, Hand & Bishop (1993) normal control means are a repeat of Cloninger et al. (1991).

Cloninger et al.'s (1991) older US white sample. Although the diabetes group scored slightly higher than the healthy group on all HA subscales (Table 15), on all subscales except HA2 (Fear of Uncertainty) the diabetes group more closely resemble similar age controls than older controls.

Unexpectedly, the NS mean scores (Table 15) were not, as hypothesized, higher for the eating disordered groups than for the non-eating disordered groups. Also, as the ranges were broader for the eating disorder groups than the non-eating disorder groups, frequency distributions were formed. Figure 7 presents the TPQ NS Total frequency distributions of scores for each of the four groups of women.

Examination of the frequency distributions in Figure 7 indicates that scores for healthy women are more clustered around the mean than are scores for the other groups. Also, except for one case in the bulimia nervosa group, the low NS Total scores for the anorexia and bulimia nervosa groups are not outliers. This indicates that women with anorexia and/or bulimia nervosa are not characteristically high in TPQ NS.

As the highest TPQ HA range scores (Table 15) were similar across all four groups of women, frequency distributions were formed to assess if outliers existed. Figure 8 presents the TPQ HA frequency distributions of scores for each of the four groups.



**Figure 7:** TPQ NS frequency distributions of scores for women with anorexia nervosa, bulimia nervosa, healthy women, and women with diabetes.

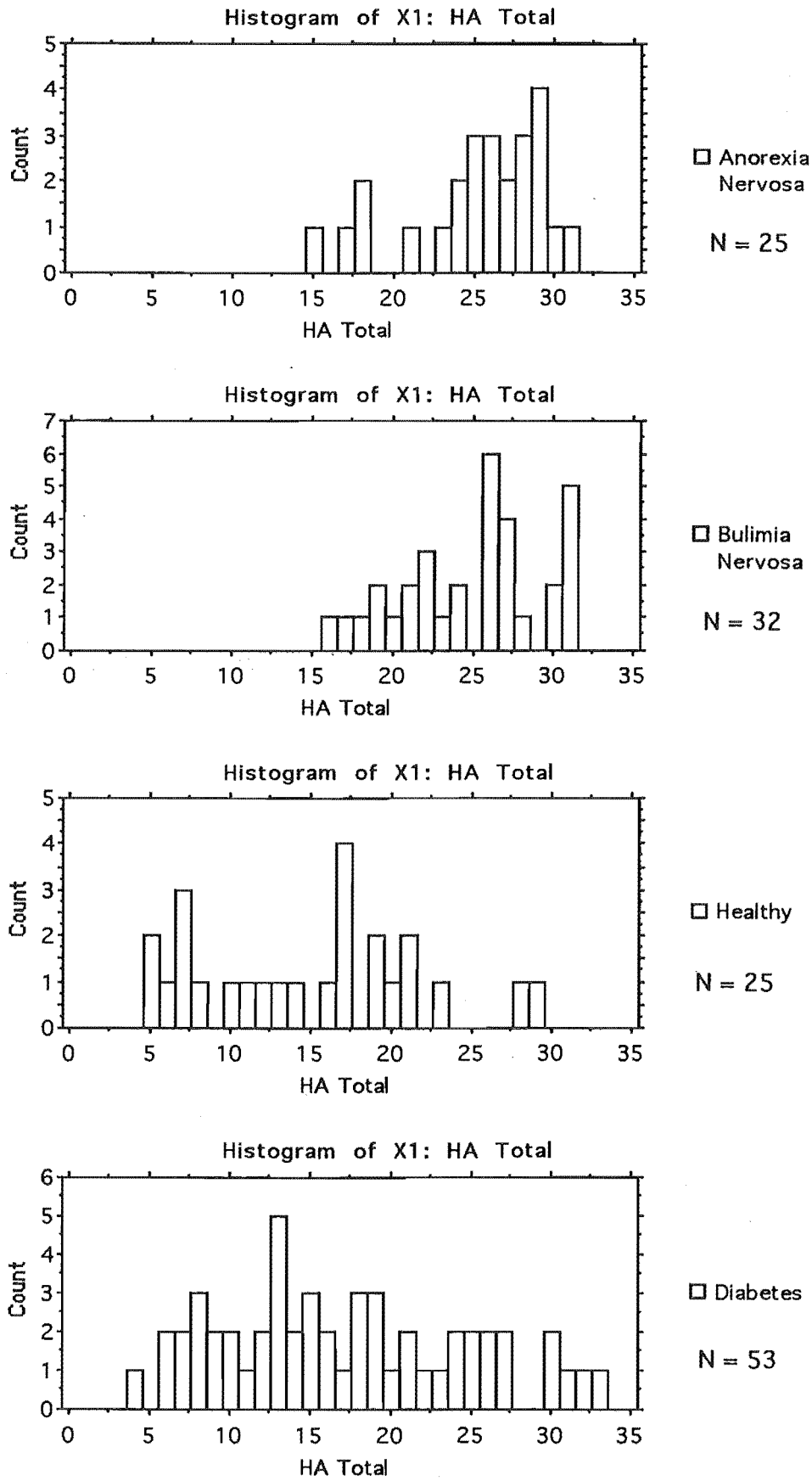


Figure 8: TPQ HA frequency distributions of scores for women with anorexia nervosa, bulimia nervosa, healthy women, and women with diabetes.

Examination of the frequency distributions in Figure 8 indicates that the TPQ HA scores for the anorexia and bulimia nervosa groups are positively skewed whereas the scores for the healthy and diabetes groups form flat distributions. Thus the differences between the eating disordered and non-eating disordered groups for TPQ HA appear to be mostly attributable to the absence of low scores in the anorexia and bulimia nervosa groups.

### PBI

Table 16 presents mean values, standard deviations and ranges for PBI subscales by group.

Table 16. PBI means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Maternal Care	20.2 <sup>a</sup> (10.5) [3-36]	20.6 <sup>a</sup> (9.5) [2-36]	29.9 <sup>b</sup> (6.1) [11-36]	26.8 <sup>b</sup> (7.5) [6-36]	9.1	.0001
Maternal Protection	19.9 <sup>a</sup> (7.4) [8-34]	19.6 <sup>a</sup> (9.7) [1-37]	9.8 <sup>b</sup> (5.0) [0-23]	13.6 <sup>b</sup> (8.1) [0-33]	10.8	.0001
Paternal Care	19.1 <sup>a,c</sup> (6.8) [3-32]	18.1 <sup>a</sup> (8.8) [3-34]	25.7 <sup>b</sup> (7.0) [11-35]	23.3 <sup>b,c</sup> (8.8) [0-36]	5.7	.0011
Paternal Protection	17.3 (8.3) [0-32]	17.4 (7.6) [6-30]	11.5 (7.9) [1-26]	12.7 (8.8) [0-34]	4.2	.008

Values shown as means, standard deviations in parentheses ( ), ranges in parentheses [ ].

Values with different superscripts are significantly different from each other.

For the anorexia and bulimia nervosa groups, the findings in Table 16 are similar to other reported findings on the Maternal Care and Paternal Care subscales (e.g., Calam et al., 1990; Palmer et al., 1988; Rhodes & Kroger, 1992). On the Maternal Protection subscale, means and standard deviations are somewhat higher than those provided by some American studies. For example, for women with anorexia nervosa, Palmer et al. (1988) reported  $M = 12.2$  ( $SD = 7.9$ ). However, Calam et al. (1990) reported findings closer to those of this study:  $M = 15.7$  ( $SD = 9.2$ ). A New Zealand study (Rhodes & Kroger, 1992) reported findings even more similar to the current study:  $M = 17.2$  ( $SD = 9.1$ ). On the Paternal Protection subscale, Table 16 findings were similar to those of Calam et al. (1990) for women with anorexia nervosa, and Kent and Clopton (1992) for women with bulimia nervosa.

For the healthy group, findings (Table 16) are similar to other studies for Maternal Care, Paternal Care and Paternal Protection (e.g., Calam et al., 1990; Kent & Clopton, 1992; Rhodes & Kroger, 1992). However, the means and standard deviations for Maternal Protection (Table 16) are lower than those of several American studies, e.g., Calam et al. (1990)  $M = 14.2$  ( $SD = 7.6$ ). Yet Rhodes' and Kroger's (1992) New Zealand study findings  $M = 9.7$  ( $SD = 6.1$ ), are similar to the current study. It seems that American and New Zealand studies find differences in levels of PBI Maternal Protection, especially for healthy women.

Of note, Ahmad, Waller and Verduyn (1994) using the PBI among British Asian and Caucasian schoolgirls (not excluding those with eating disorders) reported similar findings to the healthy group (Table 16) for their Caucasian subjects, the largest discrepancy in findings being for Maternal Protection:  $M = 10.8$  ( $SD = 6.0$ ). In contrast, the Asian schoolgirls perceived significantly lower Maternal Care and significantly higher Maternal Protection and Paternal Protection than their Caucasian peers.

No studies were located that have used the PBI specifically for persons with diabetes. Of note, the means reported in Table 16 are similar to those for healthy women on the subscales Maternal Care, Paternal Care and Paternal Protection, but somewhat higher on the scale of Maternal Protection. This may reflect an understandable concern for the successful management of the diabetes disorder by mothers of young women with insulin dependent diabetes. However, the Maternal Protection means and standard deviations for the diabetes group (Table 16) are similar to those reported in American studies for individuals without diabetes (e.g., Calam et al. 1990).

Unexpectedly, the individuals scoring highest possible Maternal Care range scores (36; Table 16) were found in all four groups. As women with anorexia and/or bulimia nervosa were hypothesized to perceive maternal care as being low, frequency distributions were formed to assess if the higher scores in the eating disordered groups were outliers. Figure 9 presents the PBI Maternal Care frequency distributions of scores for each of the four groups of women.

Examination of the frequency distributions in Figure 9 indicates that the high Maternal Care scores for the anorexia and bulimia nervosa groups are *not* outliers. On the other hand the *low* Maternal Care scores for the healthy and diabetes groups *are* outliers. This indicates that although women with anorexia and/or bulimia nervosa are more likely to perceive their early environments as low in maternal care, a substantial proportion of women with anorexia and/or bulimia nervosa perceive their early childhood environments as *high* in maternal care. The differences between the eating disordered and non-eating disordered groups for PBI Maternal Care appear to be mostly attributable to very few women in the healthy or diabetes groups perceiving their mothers as low in care.



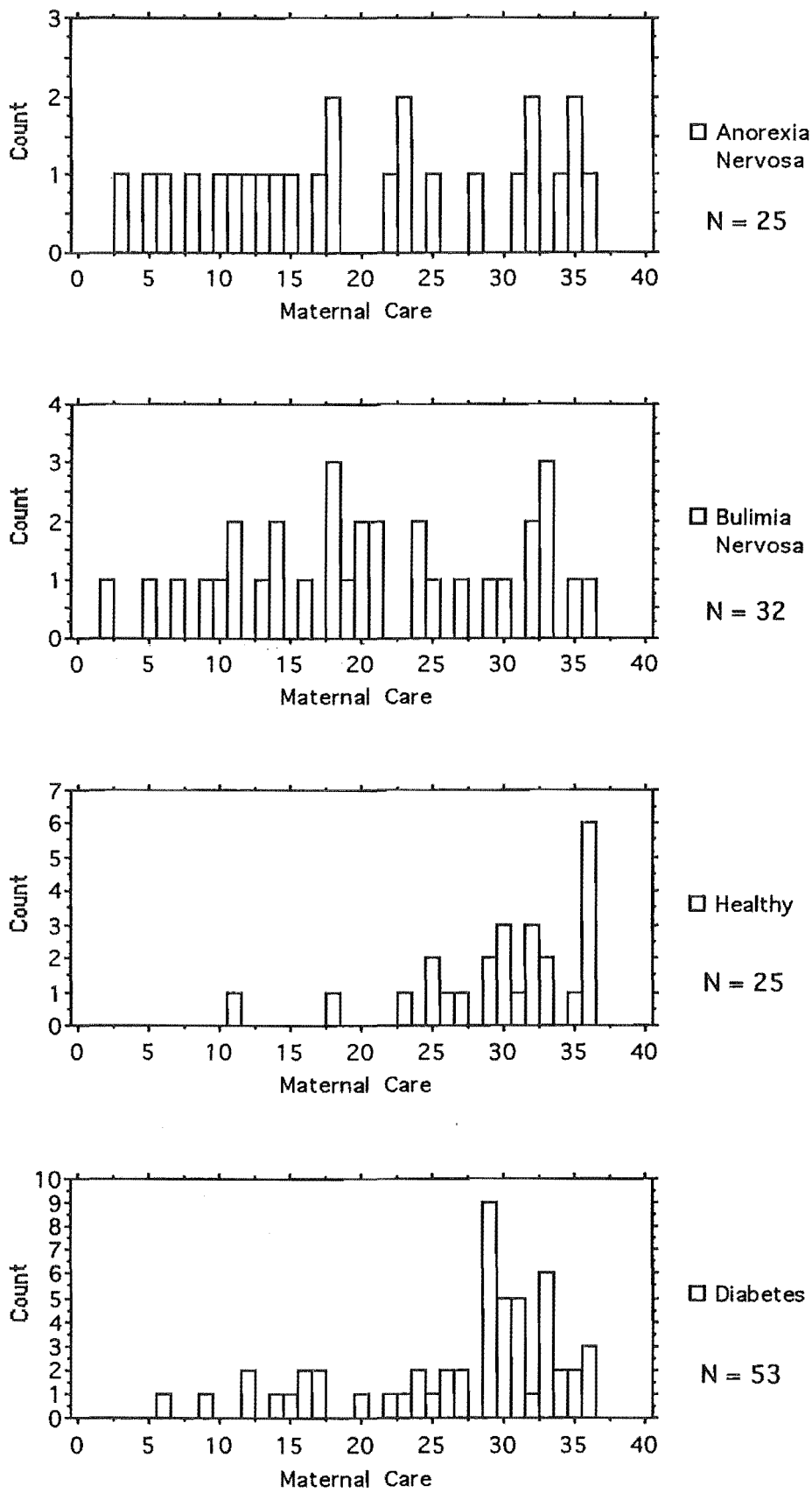


Figure 9: PBI Maternal Care frequency distributions of scores for women with anorexia nervosa, bulimia nervosa, healthy women, and women with diabetes.

FES

Table 17 presents mean values, standard deviations and ranges for FES subscales by group.

Table 17. FES means, standard deviations, and ranges of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Cohesion	3.6 <sup>a</sup> (2.6) [1-9]	4.0 <sup>a</sup> (2.8) [0-9]	6.6 <sup>b</sup> (2.1) [0-9]	6.1 <sup>b</sup> (2.8) [0-9]	9.1	.0001
Expressiveness	2.1 <sup>a</sup> (1.7) [0-7]	3.1 <sup>a,b</sup> (2.0) [0-7]	5.7 <sup>c</sup> (2.2) [2-9]	4.3 <sup>b,c</sup> (2.4) [0-9]	13.8	.0001
Conflict	5.6 (2.5) [0-8]	4.9 (2.9) [0-9]	3.7 (2.2) [0-7]	4.0 (2.6) [0-9]	3.1	.03
Independence	4.3 <sup>a</sup> (1.8) [0-8]	4.8 <sup>a</sup> (2.2) [1-8]	6.6 <sup>b</sup> (1.3) [4-8]	6.5 <sup>b</sup> (1.7) [2-9]	13.7	.0001
Achievement Orientation	6.0 (1.9) [3-9]	5.8 (1.8) [3-8]	5.2 (2.0) [2-8]	4.9 (2.0) [0-9]	2.2	.09
Intellectual-Cultural Orientation	5.0 (3.0) [0-9]	4.0 (2.4) [0-9]	5.2 (2.1) [1-8]	4.8 (2.6) [0-9]	1.2	.31
Active-Recreational Orientation	4.5 <sup>a</sup> (2.4) [0-9]	5.3 <sup>a,b</sup> (2.0) [1-9]	6.7 <sup>b</sup> (1.8) [1-9]	5.8 <sup>a,b</sup> (2.4) [1-9]	4.7	.004

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Table 17. continued

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Moral-Religious Emphasis	3.9 (1.4) [2-7]	3.8 (2.3) [0-8]	3.7 (2.2) [0-8]	3.9 (2.3) [0-9]	.08	.97
Organization	5.5 (2.7) [0-9]	5.3 (2.4) [0-9]	5.6 (1.8) [2-9]	5.6 (2.3) [0-9]	.11	.95
Control	6.2 <sup>a</sup> (2.3) [2-9]	5.8 <sup>a</sup> (2.4) [1-9]	3.4 <sup>b</sup> (2.1) [1-8]	4.2 <sup>b</sup> (2.5) [0-9]	8.4	.0001

Values shown as means, standard deviations in parentheses ( ), ranges in parentheses [ ].

Values with different superscripts are significantly different from each other.

For the anorexia nervosa, bulimia nervosa, and healthy groups, the findings in Table 17 are similar to other reported findings on all subscales except Moral-Religious Emphasis (e.g., Kent & Clopton, 1992; Rybicki, Lepkowski & Arndt 1989; Stern et al., 1989).

Although several researchers have used the FES for people with diabetes the primary emphasis of such studies has been on adherence to treatment and behaviour symptomatology. The only published FES means found for people with diabetes, used a heterogeneous sample aged 9-16 years, and reported results in graphic form, allowing only approximate comparisons (Wertlieb, Hauser & Jacobson, 1986). Comparison of Wertlieb et al.'s findings with those in Table 17 show similarities on all subscales except for Moral-Religious Emphasis:  $M =$  approximately 5.2 (Wertlieb et al., 1986) compared to  $M = 3.9$  (Table 17). Wertlieb et al. also reported that the FES means and standard deviations found in their sample closely resemble the norms reported by Moos (1974) for a normal sample. With the exception of

Moral-Religious Emphasis, this is also the case for the diabetes group in Table 17. The resemblance of means and standard deviations between the diabetes and healthy groups (Table 17) supports the notion of a similarity between people with diabetes and healthy people regarding family environment measures.

### 8.2.2 Analyses of Between-Group Differences

#### Introduction

This section examines results for one-way Analyses of Variance (ANOVAs) for appropriate demographic, physical and descriptive characteristics, and for the BDI, presented in Tables 4-8 and Table 11 above. The findings for the ANOVAs resulting from the MANOVAs are discussed in Section Three below; see Multivariate Analyses.

#### Demographic and Physical Characteristics

Considering the univariate ANOVAs for the demographic and physical characteristics of the anorexia nervosa, bulimia nervosa, healthy, and diabetes groups, there were no significant differences across groups on age or height (Table 4). However, there were some significant differences on weight and BMI measures (Table 4). As expected, the mean "current" weight of the anorexia nervosa group was significantly less than for the other three groups. The only other significant weight difference was that the diabetes group mean weight was significantly more than for the bulimia nervosa group. The healthy group mean weight was not significantly different from that of either the diabetes or bulimia nervosa groups.

Since mean heights did not differ significantly across groups, the pattern of weight differences across groups was reflected in the BMIs. The anorexia

nervosa group mean BMI was significantly lower than that of the other three groups. The diabetes group mean BMI was significantly higher than for both the bulimia nervosa and healthy groups. There was no significant difference between the mean BMIs of the bulimia nervosa and healthy groups.

For mean highest past BMI scores, the anorexia nervosa group was significantly lower than the bulimia nervosa and diabetes groups, but not the healthy group (Table 4). The only other significant difference for mean highest past BMI scores was that the diabetes group score was significantly higher than for the healthy group. For lowest adult BMIs, the anorexia nervosa group mean was significantly lower than for the other three groups. Also, the bulimia nervosa group mean was significantly lower than for the healthy group, but not the diabetes group.

Considering the univariate ANOVAs for the mean desired BMIs (Table 4), the anorexia nervosa group scored significantly lower than the other three groups. The bulimia nervosa group expressed a mean desired BMI significantly lower than the diabetes group, but not the healthy group. There was no significant difference between the healthy and diabetes groups.

### Diet and Exercise

The univariate ANOVAs for mean "Dieter's age at first diet" scores (i.e., the age at first diet of those women who had dieted; Table 6) revealed no significant differences across groups. Considering the mean number of exercise times per week, both the anorexia nervosa and bulimia nervosa groups scored significantly higher than both the diabetes and healthy groups. There were no other significant mean differences across groups for exercise times per week. For the mean duration of exercise scores (i.e.,

minutes per event), the only significant difference was that the diabetes group scored significantly higher than the healthy group.

### Menstruation

For mean age at first menstruation scores (Table 8), there were no significant differences across groups. Of those who had missed menstruating for longer than three months, there were no significant differences across groups for the mean age at which menstruation was first missed. For the mean duration that menstruation was missed (i.e., "months missed menstruation"), the anorexia nervosa group scored significantly higher than both the healthy and diabetes groups, but not the bulimia nervosa group. For the mean weight at cessation of menstruation, the anorexia nervosa group scored significantly lower than the healthy and diabetes groups, but not the bulimia nervosa group.

### Disordered Eating Index

For the Disordered Eating Index (Table 10), the univariate ANOVA showed that both the anorexia and bulimia nervosa group means were significantly higher than both the healthy and diabetes group means. Mean differences for Disordered Eating Index were not significant between the anorexia and bulimia nervosa groups, nor between the healthy and diabetes groups.

### BDI

As expected, there were significant differences across group mean BDI scores (Table 11). The anorexia nervosa group scored significantly higher than the other three groups. The bulimia nervosa group scored significantly higher than the healthy and diabetes groups. The diabetes and healthy group mean scores were not significantly different from each other.

## 8.3 SECTION TWO: CORRELATIONS

### 8.3.1 Perfectionism and Discontent Correlations

A set of variables, selected on the basis that there were theoretical or empirical reasons (discussed above) to expect them to correlate either positively or negatively  $\geq .35$ , were intercorrelated. For each hypothesis a correlation matrix was constructed across all four groups combined and also separately for each of the four respondent groups (i.e., anorexia nervosa, bulimia nervosa, healthy controls and diabetes). Correlations were categorized as  $< .35$  = weak,  $.35 - .69$  = moderate,  $.70 - .79$  = strong, and  $> .79$  = very strong.

#### Perfectionism Correlations

The correlation matrixes of the relationships among all Perfectionism measures and EDI-2 Asceticism, BDI, TPQ Harm Avoidance, TPQ Reward Dependence, TPQ Persistence, PBI Maternal Care, PBI Paternal Care, PBI Maternal Protection, PBI Paternal Protection, FES Conflict, FES Cohesion, FES Expressiveness, FES Independence, and FES Achievement Orientation are presented in Tables 18 to 22.

**Table 18.** Correlational matrix of all perfectionism variables by measures of perfectionism, depression, temperament, and family interaction measures (all groups combined).

	EDI-2 Perfect- ionism	SCANS Perfect- ionism	MPS Total	Concern over Mistakes	Personal Standards	Parental Expect- ations	Parental Criticism	Doubts about Actions	Organ- ization
EDI-2 Perfectionism	1								
SCANS Perfectionism	.46	1							
MPS Total	.74	.47	1						
- Concern over Mistakes	.60	.44	.94	1					
- Personal Standards	.69	.67	.81	.72	1				
- Parental Expectations	.68	.20	.73	.53	.47	1			
- Parental Criticism	.59	.26	.83	.69	.53	.73	1		
- Doubts about Actions	.50	.28	.79	.77	.52	.41	.61	1	
- Organization	.25	.48	.03	-.02	.29	-.01	-.08	-.06	1
EDI-2 Asceticism	.59	.36	.66	.65	.56	.39	.45	.60	.11
BDI	.51	.31	.73	.76	.54	.35	.57	.72	-.05
TPQ Harm Avoidance	.41	.26	.66	.70	.42	.37	.50	.66	-.15
- Reward Dependence	-.13	.02	-.33	-.35	-.29	-.06	-.25	-.37	.11
- Persistence	.57	.40	.50	.37	.59	.42	.38	.30	.17
PBI Maternal Care	-.31	-.21	-.56	-.49	-.38	-.36	-.67	-.46	.08
- Paternal Care	-.21	-.17	-.36	-.30	-.25	-.25	-.43	-.28	.05
- Maternal Protection	.40	.22	.55	.48	.28	.49	.63	.45	-.17
- Paternal Protection	.41	.07	.42	.35	.22	.43	.43	.38	-.12
FES Conflict	.35	.11	.39	.35	.25	.29	.48	.31	-.05
- Cohesion	-.32	-.25	-.54	-.54	-.32	-.33	-.54	-.51	.09
- Expressiveness	-.32	-.26	-.53	-.53	-.31	-.32	-.53	-.49	.07
- Independence	-.30	-.27	-.53	-.51	-.34	-.30	-.53	-.51	0
- Achievement Orientation	.48	.28	.47	.34	.49	.50	.37	.29	.16



**Table 19.** Correlational matrix of all perfectionism variables by measures of perfectionism, depression, temperament, and family interaction measures (anorexia nervosa).

	EDI-2 Perfect- ionism	SCANS Perfect- ionism	MPS Total	Concern over Mistakes	Personal Standards	Parental Expect- ations	Parental Criticism	Doubts about Actions	Organiz- ation
EDI-2 Perfectionism	1								
SCANS Perfectionism	.37	1							
MPS Total	.67	.20	1						
- Concern over Mistakes	.41	.18	.83	1					
- Personal Standards	.47	.62	.34	.22	1				
- Parental Expectations	.60	-.12	.74	.36	.06	1			
- Parental Criticism	.49	.06	.85	.54	.12	.73	1		
- Doubts about Actions	.56	.24	.80	.70	.20	.39	.65	1	
- Organization	.17	.35	-.20	-.23	.58	-.26	-.30	-.19	1
EDI-2 Asceticism	.48	.47	.22	.20	.18	0	.11	.38	.37
BDI	.52	.37	.51	.48	.34	.17	.38	.54	.22
TPQ Harm Avoidance	.40	.11	.51	.59	-.03	.15	.40	.65	-.27
- Reward Dependence	.13	.26	.25	.02	-.08	.47	.42	-.03	-.25
- Persistence	.36	-.09	.08	-.13	.30	.24	.06	-.03	.16
PBI Maternal Care	-.17	.14	-.49	-.26	-.08	-.26	-.72	-.52	.14
- Paternal Care	.17	.34	-.05	.15	.15	-.10	-.26	-.20	-.40
- Maternal Protection	.25	.03	.47	.27	-.29	.52	.68	.37	.38
- Paternal Protection	.56	-.05	.43	.15	-.04	.52	.46	.45	-.12
FES Conflict	.57	.33	.62	.43	.31	.33	.66	.61	-.11
- Cohesion	-.09	0	-.38	-.49	.13	-.06	-.37	-.44	.11
- Expressiveness	-.36	-.44	-.47	-.37	-.18	-.29	-.42	-.49	-.09
- Independence	0	-.11	-.32	-.18	-.05	-.07	-.47	-.49	-.10
- Achievement Orientation	.57	.21	.10	-.11	.34	.40	-.06	-.11	.22

**Table 20.** Correlational matrix of all perfectionism variables by measures of perfectionism, depression, temperament, and family interaction measures (bulimia nervosa).

	EDI-2 Perfect- ionism	SCANS Perfect- ionism	MPS Total	Concern over Mistakes	Personal Standards	Parental Expect- ations	Parental Criticism	Doubts about Actions	Organiz- ation
EDI-2 Perfectionism	1								
SCANS Perfectionism	-.02	1							
MPS Total	.53	.33	1						
- Concern over Mistakes	.32	.21	.82	1					
- Personal Standards	.33	.70	.76	.52	1				
- Parental Expectations	.64	-.01	.60	.27	.32	1			
- Parental Criticism	.30	.01	.64	.27	.32	.51	1		
- Doubts about Actions	.07	.12	.37	.54	.22	-.33	.01	1	
- Organization	.13	.62	.36	.32	.62	.06	.01	.10	1
EDI-2 Asceticism	.43	-.02	.29	.39	.11	.14	.01	.29	.05
BDI	.30	-.15	.04	.17	-.09	-.28	-.03	.50	-.17
TPQ Harm Avoidance	.24	.17	.26	.30	.11	.04	.04	.40	-.17
- Reward Dependence	.05	0	-.19	-.18	-.16	.09	-.11	-.37	-.06
- Persistence	.49	.23	.19	-.08	.29	.30	.17	-.10	.14
PBI Maternal Care	.22	-.02	-.13	-.03	-.11	.09	-.44	.03	.13
- Paternal Care	-.06	-.24	-.36	-.19	-.22	-.10	-.56	-.16	-.23
- Maternal Protection	.04	.06	.15	.09	-.02	.13	.28	.01	-.16
- Paternal Protection	.35	-.09	.23	.15	.03	.18	.28	.17	0
FES Conflict	-.05	-.25	.18	.03	.06	.12	.46	-.05	-.15
- Cohesion	.05	-.13	-.29	-.17	-.23	.01	-.33	-.32	.18
- Expressiveness	.14	.02	-.33	-.44	-.03	.05	-.22	-.56	.08
- Independence	.02	-.25	-.16	-.09	-.17	.07	-.20	-.19	-.10
- Achievement Orientation	.10	.51	.51	.33	.51	.28	.38	.17	.48

**Table 21.** Correlational matrix of all perfectionism variables by measures of perfectionism, depression, temperament, and family interaction measures (healthy).

	EDI-2 Perfect- ionism	SCANS Perfect- ionism	MPS Total	Concern over Mistakes	Personal Standards	Parental Expect- ations	Parental Criticism	Doubts about Actions	Organiz- ation
EDI-2 Perfectionism	1								
SCANS Perfectionism	.31	1							
MPS Total	.68	.20	1						
- Concern over Mistakes	.09	.14	.66	1					
- Personal Standards	.59	.36	.57	.27	1				
- Parental Expectations	.72	.12	.78	.15	.37	1			
- Parental Criticism	.42	.04	.83	.55	.20	.67	1		
- Doubts about Actions	.45	-.06	.53	.18	-.11	.46	.47	1	
- Organization	.60	.47	.25	-.02	.20	.23	.15	.30	1
EDI-2 Asceticism	.62	.21	.60	.17	.58	.52	.27	.47	.14
BDI	.09	.05	.05	.17	-.36	-.04	.17	.36	.26
TPQ Harm Avoidance	-.04	-.25	.31	.40	-.25	.23	.37	.37	.01
- Reward Dependence	.04	.49	-.01	-.17	.06	.19	-.03	-.11	.11
- Persistence	.60	.07	.72	.50	.63	.49	.43	.29	.19
PBI Maternal Care	-.20	-.07	-.71	-.63	-.11	-.54	-.84	-.31	.01
- Paternal Care	-.19	.01	-.25	-.20	-.26	-.25	-.18	.11	.25
- Maternal Protection	.41	.23	.65	.42	.02	.68	.72	.40	.05
- Paternal Protection	.57	.15	.50	.13	.39	.63	.36	.14	.29
FES Conflict	.62	.21	.51	.23	.31	.55	.43	.18	.36
- Cohesion	-.46	-.25	-.60	-.28	-.28	-.68	-.50	-.28	-.19
- Expressiveness	-.12	-.23	-.30	-.15	-.23	-.19	-.35	-.13	-.25
- Independence	-.12	-.11	-.24	-.19	-.10	-.17	-.28	-.08	-.25
- Achievement Orientation	.62	.11	.69	.38	.62	.62	.42	.18	.22

**Table 22.** Correlational matrix of all perfectionism variables by measures of perfectionism, depression, temperament, and family interaction measures (diabetes).

	EDI-2 Perfect- ionism	SCANS Perfect- ionism	MPS Total	Concern over Mistakes	Personal Standards	Parental Expect- ations	Parental Criticism	Doubts about Actions	Organiz- ation
EDI-2 Perfectionism	1								
SCANS Perfectionism	.62	1							
MPS Total	.72	.35	1						
- Concern over Mistakes	.57	.31	.91	1					
- Personal Standards	.72	.64	.69	.53	1				
- Parental Expectations	.56	.14	.70	.50	.31	1			
- Parental Criticism	.48	0	.69	.50	.23	.70	1		
- Doubts about Actions	.29	.01	.70	.69	.31	.28	.38	1	
- Organization	.32	.56	-.05	-.14	.32	-.04	-.15	-.26	1
EDI-2 Asceticism	.44	.25	.56	.56	.42	.32	.25	.43	.12
BDI	.16	-.03	.49	.60	.18	.18	.25	.54	-.29
TPQ Harm Avoidance	.26	.06	.51	.57	.19	.25	.28	.54	-.27
- Reward Dependence	.04	.31	-.08	-.03	.01	-.04	-.17	-.15	.34
- Persistence	.47	.52	.40	.23	.58	.27	.18	.16	.20
PBI Maternal Care	-.41	-.19	-.52	-.46	-.25	-.34	-.56	-.41	0
- Paternal Care	-.15	.01	-.16	-.12	.05	-.16	-.30	-.15	-.16
- Maternal Protection	.37	-.03	.44	.34	.05	.44	.61	.38	.06
- Paternal Protection	.15	-.10	.28	.28	-.06	.27	.34	.30	-.30
FES Conflict	.24	.04	.21	.28	.03	.05	.26	.17	-.11
- Cohesion	-.21	-.07	-.37	-.44	.02	-.20	-.46	-.38	.13
- Expressiveness	-.19	.07	-.24	-.29	.13	-.19	-.38	-.24	.26
- Independence	-.20	.11	-.34	-.36	.10	-.30	-.43	-.38	.18
- Achievement Orientation	.53	.09	.59	.42	.48	.54	.47	.37	-.05

### Perfectionism Variables

In Tables 18 to 22 moderate or strong correlations are evident among many, but not all, perfectionism variables. For all four groups combined (Table 18), MPS Organization scores were moderately correlated with SCANS Perfectionism scores, but weakly correlated with all other perfectionism measures. All other perfectionism variables (Table 18) were moderately or strongly positively correlated among each other,\* except for weak correlations between SCANS Perfectionism scores and three MPS measures (Parental Expectations, Parental Criticism, and Doubts about Actions). When correlations were calculated group by group (Tables 19 to 22) correlations among Perfectionism measures were less consistent.

EDI-2 Perfectionism scores correlated strongly positively with the MPS Total scores and moderately positively with all MPS subscales (except Organization) for all four groups combined (Table 18). For each group (Tables 19 to 22), EDI-2 Perfectionism scores were consistently positively correlated with the MPS Total scores, strongly for the diabetes group (Table 22), and moderately for the other groups (Tables 19 to 21). This indicates that EDI-2 Perfectionism and the MPS are tapping some common facets of perfectionism. The specificity of this association is unclear because the correlations between EDI-2 Perfectionism scores and MPS measures were not consistent across all groups.

EDI-2 Perfectionism scores and MPS Parental Expectations scores were consistently positively correlated across all groups (Tables 19 to 22), strongly in the healthy group, and moderately in the other groups. EDI-2 Perfectionism scores were consistently positively correlated, moderately, or

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\* The MPS Total was very strongly correlated with some MPS variables: Concern over Mistakes, Personal Standards, and Parental Criticism. Some very strong correlations between the MPS Total and several MPS subscales was also found for some individual groups. As this is merely reflecting the strength of association between subscales and the total score to which they are contributing, these will not be discussed further.

strongly, with MPS Personal Standards and Parental Criticism scores across all groups, except for women with bulimia nervosa. Bulimia nervosa group correlations for EDI-2 Perfectionism scores were .33 with MPS Personal Standards and .30 with MPS Parental Criticism measures.

The subscales of the MPS which correlated most strongly with SCANS Perfectionism scores were Personal Standards and Organization. This was consistent for all four groups combined and for each group (Tables 18 to 22). All correlations between MPS Organization and SCANS Perfectionism measures were moderate (i.e., for all groups combined and for each group). The correlation (.36) between SCANS Perfectionism scores and MPS Personal Standards scores among healthy women (Table 21) was the only correlation between these two variables below .62. These correlations indicate that there is a relationship between SCANS Perfectionism and MPS Organization and between SCANS Perfectionism and MPS Personal Standards. This claim is further supported by a pattern of consistently weak positive, or negative, correlations among SCANS Perfectionism scores and all other MPS measures across all groups (Tables 19 to 22). Excluding MPS Personal Standards and Organization, the 16 correlations for each of the four groups among SCANS Perfectionism and MPS measures ranged from -.12 between SCANS Perfectionism scores and MPS Parental Expectations scores, for women with bulimia nervosa (Table 20), to .31 between SCANS Perfectionism scores and MPS Concern over Mistakes scores, for women with diabetes (Table 22).

Regarding the association of MPS variables among each other, MPS Organization scores were consistently weakly correlated with all other MPS measures across all groups (Tables 19 to 22), except that for the eating disordered groups MPS Organization and Personal Standards scores were moderately correlated. Although MPS Personal Standards scores were

moderately, (in one instance, strongly) correlated with all other MPS measures (except Organization) for all four groups combined, this pattern was not repeated for the individual groups, where most such correlations were weak.

Zero, and negative, correlations for women with bulimia nervosa (Table 20) among MPS Doubt about Actions scores and the parental measures (Parental Expectations and Parental Criticism) were different from the patterns of other groups. For the anorexia nervosa, healthy, and diabetes groups Doubts about Actions scores were moderately positively correlated with Parental Criticism scores. This pattern of correlations also occurred between Doubts about Actions and Parental Expectations scores, except for the weak correlation for the diabetes group (.28).

#### EDI-2 Asceticism

EDI-2 Asceticism scores correlated moderately positively with EDI-2 Perfectionism scores across all groups indicating that there is some relationship between these two EDI-2 variables. EDI-2 Asceticism scores correlated moderately positively with MPS Doubts about Actions scores across all groups, except for women with bulimia nervosa (Tables 19 to 22). The correlations between EDI-2 Asceticism and MPS Personal Standards scores were moderately positive in the non-eating disordered groups (.58 for healthy women, and .42 for women with diabetes), but not in the eating disordered groups (.18 for women with anorexia nervosa, and .11 for women with bulimia nervosa).

#### BDI

MPS Doubts about Actions was the only perfectionism measure which was consistently correlated to a moderate positive degree with the BDI measure (Tables 18 to 22). This indicates that the BDI and MPS Doubts about Actions

scores are related in some way. On the other hand, MPS Personal Standards scores correlated only weakly (positively or negatively) with BDI scores across all groups.

### TPQ

Moderate positive correlations were evident between TPQ HA and MPS Doubts about Actions scores across all groups (Tables 19 to 22). The only other consistent moderate positive correlation between TPQ HA and any perfectionism measure was with the MPS Concern over Mistakes measure (except that women with bulimia nervosa had a correlation of .30). This indicates that the doubt and worry aspects of perfectionism are related in some way to a harm-avoidant temperament.

For the bulimia nervosa group, the correlation between TPQ Harm Avoidance scores and MPS Parental Criticism scores was zero. This differentiated the bulimia nervosa group from the other groups with moderately positive correlations for the anorexia nervosa group (.40) and the healthy group (.37), and slightly less for the diabetes group (.28).

No moderate or strong positive correlation patterns were evident across groups between TPQ RD and perfectionism measures (Tables 18 to 22). For example, correlations between TPQ RD and MPS Personal Standards scores were all  $<.06$  across all groups. For the 20 correlations across groups, between TPQ RD and MPS measures, only two were moderately positive. Both of these correlations were for the women with anorexia nervosa group and both for parental measures (i.e., MPS Parental Expectations and Parental Criticism) (Table 19). This may indicate that a reward-dependent temperament in women with anorexia nervosa is associated with aspects of parental behaviour.



Scores on the Persistence dimension of the TPQ correlated moderately positively with EDI-2 Perfectionism scores across all groups and to a moderate or strongly positive degree with MPS Total and MPS Personal Standards scores for the non-eating disordered groups only (Tables 18 to 22).

### PBI

The only consistent correlations, across all groups, among PBI Maternal Care and perfectionism measures were between PBI Maternal Care and MPS Parental Criticism scores (Tables 18 to 22). These negative correlations were moderate for the bulimia nervosa and diabetes groups (-.44, -.56 respectively), strong for the anorexia nervosa group (-.72), and very strong for the healthy group (-.84). This indicates that perceived maternal care interacts with perceived parental criticism.

Correlations among PBI Paternal Care and perfectionism measures were weaker than those among PBI Maternal Care and perfectionism measures (Tables 18 to 22). Of the 20 correlations among PBI Paternal Care and MPS subscales only one was at least moderately correlated, that being between PBI Paternal Care and MPS Parental Criticism scores, for the bulimia nervosa group only (-.56). The two next highest of the 20 correlations were also between PBI Paternal Care and MPS Parental Criticism scores (-.30) for the diabetes group and (-.26) for the anorexia nervosa group.

Correlations among PBI Maternal Protection and perfectionism measures were moderately, or strongly, positive on the MPS Total and MPS subscales of Parental Expectations, Parental Criticism and Doubts about Actions across all groups except women with bulimia nervosa. All other correlations among PBI Maternal Protection and MPS subscales were weak (except with MPS Concern over Mistakes scores for the healthy group only). Correlations among PBI Maternal Protection and SCANS Perfectionism scores were also

weak. Correlations among PBI Maternal Protection and EDI-2 Perfectionism scores were weak for the eating disordered groups but moderately positive for the non-eating disordered groups.

Correlations among PBI Paternal Protection and perfectionism measures were less consistent than those among PBI Maternal Protection and perfectionism measures. The pattern of association between PBI Maternal Protection and MPS Parental Criticism scores was repeated on the Paternal Protection dimension (i.e., moderately positive correlations across all groups\* except for women with bulimia nervosa). Correlations among PBI Paternal Protection and EDI-2 Perfectionism scores were moderately positive for all groups except the diabetes group.

### FES

FES Conflict scores correlated moderately positively with MPS Parental Criticism scores across all groups except the diabetes group (Tables 18 to 22). No correlational patterns were noted among FES Conflict and other perfectionism measures.

FES Cohesion scores correlated moderately negatively with the MPS Total and MPS Parental Criticism scores, across all groups, except for the bulimia nervosa group (Tables 18 to 22). However, the correlation among FES Cohesion and MPS Parental Criticism measures was almost moderate in the bulimia nervosa group (-.33), accounting for approximately 10% of the variance.

FES Expressiveness scores correlated moderately negatively with MPS Parental Criticism scores across all groups except women with bulimia nervosa (Tables 18 to 22). FES Expressiveness scores correlated moderately

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\* The healthy group correlation (.34) was a slight exception as  $\geq .35$  is categorized (for this study) as moderate.

negatively with MPS Concern over Mistakes and MPS Doubts about Actions scores, for the eating disordered groups but not the non-eating disordered groups (Tables 18 to 22).

No consistent correlation patterns were evident across all groups for the FES Independence subscale (Tables 18 to 22). For the anorexia nervosa and diabetes groups only, FES Independence scores correlated moderately negatively with MPS Parental Criticism and MPS Doubts about Actions scores.

FES Achievement Orientation scores correlated moderately positively with EDI-2 Perfectionism and MPS Parental Expectations scores across all groups except women with bulimia nervosa (Tables 18 to 22). FES Achievement Orientation scores correlated moderately positively with MPS Total, MPS Personal Standards, and MPS Parental Criticism scores across all groups except women with anorexia nervosa (Tables 18 to 22).

### Summary

The main findings for perfectionism correlations were firstly that, for all four groups combined, all perfectionism measures were positively correlated, moderately or strongly, among each other, except for MPS Organization and SCANS Perfectionism scores. Considering correlations for each group, EDI-2 Perfectionism scores were consistently positively correlated, moderately or strongly, with scores for the MPS Total and MPS subscales of Parental Expectations, Parental Criticism, and Personal Standards.\* SCANS Perfectionism scores were consistently, moderately or strongly, associated with MPS Personal Standards and Organization scores, but weakly with other MPS perfectionism measures, indicating that SCANS Perfectionism is tapping more healthy, than dysfunctional, facets of

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\* except that two correlations for the bulimia nervosa group scores were .33 and .30.

perfectionism. The only perfectionism measure consistently moderately positively correlated with BDI scores was MPS Doubts about Actions, indicating that these two measures are related in some way. MPS Doubts about Actions scores were also related to TPQ HA scores, as were MPS Concern over Mistakes scores. Unexpectedly, almost no association was found among TPQ RD and perfectionism scores. Considering relations among perfectionism and PBI measures across groups, low PBI Maternal Care scores were consistently moderately to very strongly associated with high MPS Parental Criticism scores. MPS Parental Criticism was also the perfectionism measure most consistently associated with FES measures. High MPS Parental Criticism scores were generally associated with high FES Conflict and low FES Cohesion and Expressiveness scores, that is, with scores on the relationship dimension of the FES. Associations among other parent/family and perfectionism measures were less consistent.

Discontent Correlations

The correlation matrixes of the relationships among Discontent Measures (BDI and SCANS General Dissatisfaction) and TPQ Harm Avoidance, FES Conflict, FES Cohesion, FES Active-Recreational Orientation are presented in Tables 23 to 27.

Table 23. Correlation matrix of measures of discontent by measures of discontent, harm avoidance, and family interaction (all groups).

	BDI	SCANS General Dissatisfaction
BDI	1	
SCANS General Dissatisfaction	.86	1
TPQ Harm Avoidance Total	.72	.76
FES - Conflict	.34	.40
- Cohesion	-.45	-.54
- Active-Recreational Orientation	-.19	-.20

**Table 24.** Correlation matrix of measures of discontent by measures of discontent, harm avoidance, and family interaction (anorexia nervosa).

	BDI	SCANS General Dissatisfaction
BDI	1	
SCANS General Dissatisfaction	.78	1
TPQ Harm Avoidance Total	.66	.66
FES - Conflict	.62	.56
- Cohesion	-.43	-.36
- Active-Recreational Orientation	.16	.12

**Table 25.** Correlation matrix of measures of discontent by measures of discontent, harm avoidance, and family interaction (bulimia nervosa).

	BDI	SCANS General Dissatisfaction
BDI	1	
SCANS General Dissatisfaction	.57	1
TPQ Harm Avoidance Total	.59	.64
FES - Conflict	-.05	.16
- Cohesion	-.06	-.45
- Active-Recreational Orientation	.07	-.09

**Table 26.** Correlation matrix of measures of discontent by measures of discontent, harm avoidance, and family interaction (healthy).

	BDI	SCANS General Dissatisfaction
BDI	1	
SCANS General Dissatisfaction	.63	1
TPQ Harm Avoidance Total	.32	.38
FES - Conflict	.21	.32
- Cohesion	.13	-.29
- Active-Recreational Orientation	.19	.04

**Table 27.** Correlation matrix of measures of discontent by measures of discontent, harm avoidance, and family interaction (diabetes).

	BDI	SCANS General Dissatisfaction
BDI	1	
SCANS General Dissatisfaction	.77	1
TPQ Harm Avoidance Total	.67	.68
FES - Conflict	.19	.33
- Cohesion	-.29	-.41
- Active-Recreational Orientation	-.07	-.06

### Discontent Variables

In Table 23 it can be seen that, for all four groups combined, the two highest correlating variables were BDI and SCANS General Dissatisfaction. The very strong correlation (.86) suggests 74% of the variance to be in common. For each group the correlations between BDI and SCANS General Dissatisfaction scores ranged from .57 to .78, thus, at least, accounting for 32% of the variance. These correlations were strong for the anorexia nervosa and diabetes groups and moderate for the bulimia nervosa and healthy groups. Thus the hypothesized strong correlations between scores on the BDI and SCANS General Dissatisfaction are confirmed for two of the groups, and exceeded for all four groups combined.

For the anorexia nervosa, healthy and diabetes groups no two measures were more strongly correlated than the BDI and SCANS General Dissatisfaction measures (Tables 24, 26 and 27). The only exception to this pattern was that, for the bulimia nervosa group, TPQ Harm Avoidance scores correlated slightly more highly with discontent measures than the BDI and SCANS General Dissatisfaction scores did with each other.

Comparing these correlations between BDI and SCANS General Dissatisfaction measures (Tables 23 to 27) with the correlations between BDI and perfectionism measures (Tables 18 to 22, above), indicated that, for all groups combined, and within each group, the correlations between BDI and SCANS General Dissatisfaction scores were greater than between BDI and any perfectionism measure. Thus the BDI depression measure was more strongly associated with the SCANS General Dissatisfaction measure than with any perfectionism measure in the study.

### TPQ Harm Avoidance

The correlations between TPQ Harm Avoidance and SCANS General Dissatisfaction scores were strong for all four groups combined, and moderate for each of the individual groups (Tables 23 to 27). In comparison, correlations between TPQ Harm Avoidance and BDI scores were slightly less, or equal to, those between TPQ Harm Avoidance and SCANS General Dissatisfaction scores (Tables 23 to 27). The only correlation between TPQ Harm Avoidance and BDI scores that was less than moderate was .32 for the healthy group (Table 26). Thus, the hypothesized positive correlations between TPQ Harm Avoidance and BDI scores were confirmed.

### Family Environment

The hypothesized positive correlations between BDI depression and FES Conflict scores, although confirmed for all groups combined and all groups, except the bulimia nervosa group (correlating -.05), tended to be weak (Tables 23 to 27). The only moderate correlation was for the anorexia nervosa group (Table 24). Similarly, correlations between SCANS General Dissatisfaction and FES Conflict scores, although positive, tended to be weak. Moderate correlations between these two variables occurred for all groups combined and the anorexia nervosa group (Tables 23 to 27).

The hypothesized negative correlations between BDI depression and FES Cohesion scores were not confirmed for all groups (Tables 23 to 27). The only moderately negative correlations between BDI and FES Cohesion scores were for all four groups combined and for the anorexia nervosa group. Although the correlations between BDI and FES Cohesion scores were weakly negative for the bulimia nervosa and diabetes groups, they were weakly positive for the healthy group (Tables 23 to 27). A slightly more consistent correlation pattern was evident between FES Cohesion and SCANS General Dissatisfaction scores than between FES Cohesion and BDI

scores (Tables 23 to 27). All correlations between FES Cohesion and SCANS General Dissatisfaction scores were moderate except for the healthy group (-.29, slightly less than moderate, Table 26).

The hypothesized negative correlations between BDI depression and FES Active-Recreational Orientation scores were not consistently confirmed for all groups (Tables 23 to 27). Two, of the five correlations were weakly negative and the others weakly positive. This indicates that there is no association between depression and Active-Recreational Orientation. Similarly, no clear correlational pattern was found between SCANS General Dissatisfaction and Active-Recreational Orientation scores, with all correlations being weakly positive or negative (Tables 23 to 27).

### **8.3.2 BDI Covariate Test Correlations**

Correlational analysis was performed to ascertain the association between BDI scores and all variables on the instruments EDI-2, TPQ, MPS, SCANS, PBI, and FES. The purpose of correlating BDI scores with other measures was to investigate the suitability of BDI as a covariate in this study, from a statistical perspective. A significant relationship between BDI and the dependent variables in the study is one of several pre-requisites to using it as a covariate.

Table 28 presents the correlations between BDI scores and all variables on the EDI-2, TPQ, MPS, SCANS, PBI, and FES for all groups combined.



**Table 28.** Correlations between BDI and EDI-2, TPQ, MPS, SCANS, PBI and FES variables for all groups combined.

Instrument	Variable	BDI Correlation
EDI-2	Drive for Thinness	.73
	Bulimia	.55
	Body Dissatisfaction	.55
	Ineffectiveness	.87
	Perfectionism	.51
	Interpersonal Distrust	.67
	Interceptive Awareness	.79
	Maturity Fears	.47
	Asceticism	.73
	Impulse Regulation	.67
	Social Insecurity	.80
TPQ	Novelty Seeking Total	-.28*
	NS1: Exploratory Excitability	-.44
	NS2: Impulsivity	-.23*
	NS3: Extravagance	-.12*
	NS4: Disorderliness	0*
	Harm Avoidance Total	.72
	HA1: Anticipatory Worry	.75
	HA2: Fear of Uncertainty	.36
	HA3: Shyness	.55
	HA4: Fatiguability	.47
	Reward Dependence Total	-.37
	RD1: Sentimentality	.03*
	RD2: Attachment	-.58
	RD3: Dependence	.18*
	Persistence	.32*
MPS	MPS Total	.73
	Concern over Mistakes	.76
	Personal Standards	.54
	Parental Expectations	.35
	Parental Criticism	.57
	Doubts about Actions	.72
	Organization	-.05*

\* correlations <.35

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Table 28. continued.

Instrument	Variable	BDI Correlation
SCANS	General Dissatisfaction	.86
	Perfectionism	.31*
PBI	Maternal Care	-.42
	Maternal Protection	.44
	Paternal Care	-.24*
	Paternal Protection	.31*
FES	Cohesion	-.45
	Expressiveness	-.52
	Conflict	.34*
	Independence	-.50
	Achievement Orientation	.19*
	Intellectual-Cultural Orientation	-.16*
	Active-Recreational Orientation	-.19*
	Moral-Religious Emphasis	.04*
	Organization	-.10*
	Control	.39

\* correlations <.35

Correlations between BDI scores and other measures (Table 28) were  $\geq .35$  on some variables which together comprise an entire instrument or dimension of an instrument. These moderate, or strong, correlations were found for all variables of the EDI-2, for all TPQ Harm Avoidance variables, and for all those MPS variables which comprise the MPS Total.\*

Correlations with BDI scores were <.35 for TPQ NS Total scores and NS2 (Impulsivity), NS3 (Extravagance), and NS4 (Disorderliness) scores. Other TPQ measures weakly correlated with BDI scores were RD1 (Sentimentality), RD3 (Dependence), and the Persistence Dimension. Other correlations which prevented all variables comprising an entire instrument, or

\* As discussed above, MPS Organization is the only MPS variable not contributing to the MPS Total.

dimension of an instrument, from being moderately, or strongly correlated with the BDI scores were on the SCANS, PBI, and FES instruments. The specific variables weakly correlated with the BDI scores were SCANS Perfectionism, PBI Paternal Care and Paternal Protection measures, and six FES variables, being, Conflict, Achievement Orientation, Intellectual-Cultural Orientation, Active-Recreational Orientation, Moral-Religious Emphasis, and Organization.

As the moderate negative correlation between BDI scores and the TPQ RD Dimension scores ( $-.37$ ; Table 28) was not concordant with the literature this was investigated further. Researchers have consistently reported that of the four TPQ dimensions, HA is the only one to be more than minimally influenced by depression (e.g., Mulder & Joyce, 1994; Svrakic et al., 1992). The correlation between BDI and TPQ RD2 (Attachment) scores ( $-.58$ ; Table 28) indicated that Attachment was the only TPQ subscale contributing to the moderate negative correlation between BDI and the TPQ RD Dimension measures. This implies that the more depressed an individual becomes the less attached s/he becomes. It may be that low TPQ RD2 Attachment (i.e., low social attachment) reflects, to some extent, the social insecurity and interpersonal distrust found in women with anorexia and/or bulimia nervosa (e.g., Garner et al., 1991; Gleaves & Eberenz, 1993; Williamson et al., 1993).<sup>\*</sup> To test this notion correlational analysis was performed, for all groups combined, between TPQ RD2 (Attachment) scores and EDI-2 Social Insecurity and EDI-2 Interpersonal Distrust scores respectively. Strong negative correlations were found between TPQ RD2 (Attachment) and EDI-2 Social Insecurity scores ( $-.71$ ), and between TPQ RD2 (Attachment) and EDI-2 Interpersonal Distrust scores ( $-.71$ ).

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\* EDI-2 Social Insecurity measures the level of comfort perceived in one's relationships with others. A high social insecurity score usually reflects tense, insecure and unrewarding relationships with others. EDI-2 Interpersonal Distrust measures a general distancing of emotions from, a lack of trust in, and a reluctance to form close relationships, with others.

## 8.4 SECTION THREE: MULTIVARIATE ANALYSES

### 8.4.1 Multivariate Analyses of Variance

Overall group differences for each of the six instruments with subscales was determined by Multivariate Analyses of Variance (MANOVAs). Thus separate MANOVAs were performed using the EDI-2, MPS, SCANS, TPQ, PBI, and FES. For comparison, two MANOVAs were performed using the TPQ, one using the four dimensions of which the TPQ is comprised, the other incorporating the eleven subscales of the TPQ and the TPQ dimension which has no subscales (i.e., Persistence). Univariate ANOVAs were subsequently performed on all subscales. To reduce the risk of Type 1 error, it was intended that univariate ANOVAs only be performed on subscales with significant MANOVAs for the overall scale.\*

As noted above, all MANOVAs performed were significant. MANOVA statistics for the EDI-2, MPS, SCANS, TPQ, PBI, and FES are presented in Table 29. The statistics presented are from the Wilk's lambda test for within-subject effects, F values, degrees of freedom, and probability values.

Table 29. MANOVA statistics for the EDI-2, TPQ, SCANS, MPS, PBI, and FES.

Scale	Wilk's lambda	F	df	p
EDI-2	0.24	6.67	33, 131	0.0001
MPS	0.35	8.88	18, 131	0.0001
SCANS	0.43	22.39	6, 131	0.0001
TPQ Dimensions	0.56	6.75	12, 130	0.0001
TPQ Subscales	0.44	3.46	33,130	0.0001
PBI	0.73	3.50	12, 131	0.0001
FES	0.55	2.68	30, 130	0.0001

\* All MANOVAs in this study were significant at  $p < .01$ .

### Univariate ANOVAs

The univariate ANOVAs for the six psychometric instruments with significant MANOVAs (Tables 9, 12, 13, 15 to 17 above) revealed numerous significant mean differences across groups (using the Scheffe F-test for post-hoc group comparisons).

### EDI-2

The univariate ANOVAs for the EDI-2 (Table 9) revealed that, for the Bulimia subscale, there were no significant mean differences across the anorexia nervosa, healthy, and diabetes groups. As expected, the bulimia nervosa group mean was significantly higher than for the anorexia nervosa group on the Bulimia subscale. There were no significant differences between the anorexia and bulimia nervosa group means on the other EDI-2 subscales. There were no significant differences between the healthy and diabetes group means on any of the eleven EDI-2 subscales.

Both the anorexia and bulimia nervosa group means were significantly higher than for both the healthy and diabetes groups on the EDI-2 subscales of Drive For Thinness, Body Dissatisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness, Asceticism, Impulse Regulation, and Social Insecurity. On the Maturity Fears subscale the anorexia nervosa group mean was significantly higher than for both the healthy and diabetes groups. The bulimia nervosa group mean was not significantly different from that of other groups for Maturity Fears.

### MPS

Considering the univariate ANOVAs for the MPS subscales (Table 12), the only significant difference between anorexia and bulimia nervosa group means was on the Parental Criticism subscale, with the anorexia nervosa

group scoring higher. There were no significant mean score differences between the healthy and diabetes groups on any of the six MPS subscales.

Both the anorexia and bulimia nervosa group means were significantly higher than for both the healthy and diabetes groups on the subscales of Concern over Mistakes, Personal Standards Parental Criticism, and Doubts about Actions.

For the Parental Expectations subscale, the anorexia nervosa group mean was significantly higher than for both the healthy and diabetes groups, but not the bulimia nervosa group. The bulimia nervosa group mean was significantly higher than for the healthy group only. The healthy and diabetes group means were not significantly different.

As expected, for the Organization subscale, there were no significant mean differences across any of the four groups.

### SCANS

In the SCANS univariate ANOVAs (Table 13), for the General Dissatisfaction subscale, there were no significant mean differences between the anorexia and bulimia nervosa groups. Similarly, there were no significant mean differences between the healthy and diabetes groups. Comparing the eating disordered and non-eating disordered groups, on the General Dissatisfaction subscale, both the anorexia and bulimia nervosa groups scored significantly higher than both the healthy and diabetes groups.

For the Perfectionism subscale, mean differences between the anorexia and bulimia nervosa groups were not significant. The mean Perfectionism score for the healthy group was significantly lower than for the other three groups

(anorexia nervosa, bulimia nervosa, and diabetes). The mean Perfectionism score for the diabetes group was significantly lower than for the anorexia nervosa group, but not significantly different from the bulimia nervosa group.

## TPQ

### Novelty Seeking

On the univariate ANOVAs for the TPQ (Table 15), the only significant difference on the mean Novelty Seeking (NS) Total scores was that the anorexia nervosa group scored significantly lower than the diabetes group. Considering the NS subscale, there were no significant differences across group means for NS1 (Exploratory Excitability) and NS4 (Disorderliness). The only significant differences for NS subscale mean scores were that the anorexia nervosa group scored significantly lower than the diabetes group on NS3 (Extravagance), and significantly lower than both the diabetes and healthy groups on NS2 (Impulsivity).

### Harm Avoidance

For the TPQ Harm Avoidance (HA) Total, univariate ANOVAs (Table 15) showed that both the anorexia and bulimia nervosa group mean scores were significantly higher than for both the healthy and diabetes groups. HA Total mean differences between the anorexia and bulimia nervosa groups were not significant. Similarly, HA Total mean score differences between the healthy and diabetes groups were not significant. Considering the HA subscale group means, for HA1 (Anticipatory Worry) and HA3 (Shyness), both the anorexia and bulimia nervosa groups scored significantly higher than both the healthy and diabetes groups. Mean differences were not significant between the anorexia and bulimia nervosa groups, nor between the healthy and diabetes groups on these two measures. For HA2 (Fear of Uncertainty) and HA4 (Fatiguability) the only significant mean differences

were that the bulimia nervosa group scored significantly higher than the healthy group on both measures.

### Reward Dependence

The univariate ANOVAs for the TPQ Reward Dependence (RD) Total (Table 15), showed that both the anorexia and bulimia nervosa group means were significantly higher than for both the healthy and diabetes groups. RD Total mean scores were not significantly different between the anorexia and bulimia nervosa groups, nor between the healthy and diabetes groups. The RD2 (Attachment) pattern of significance was identical to that of the RD Total. Both the RD1 (Sentimentality) and RD3 (Dependence) univariate ANOVAs showed no significant mean differences across groups.

### Persistence

Considering the TPQ Persistence dimension (Table 15), the anorexia nervosa group mean was significantly higher than for both the healthy and diabetes groups, but not the bulimia nervosa group. The bulimia nervosa group mean was significantly higher than for the healthy group only. The healthy group mean was not significantly different from the diabetes group mean.

### PBI

Univariate ANOVAs for the PBI (Table 16) revealed that both the anorexia and bulimia nervosa group mean scores were significantly lower on the Maternal Care subscale, and significantly higher on the Maternal Protection subscale, compared to both the healthy and diabetes groups. Both Maternal Care and Maternal Protection mean score differences were not significant between the anorexia and bulimia nervosa groups, nor between the healthy and diabetes groups.



For Paternal Care (Table 16), the bulimia nervosa group mean was significantly lower than for both the healthy and diabetes groups, but not the anorexia nervosa group. The anorexia nervosa group mean was significantly lower than for the healthy group only. The healthy group mean was not significantly different from the diabetes group mean. The Paternal Protection univariate ANOVAs showed no significant mean differences across groups.

### FES

Considering univariate ANOVAs for the FES (Table 17), both the anorexia and bulimia nervosa group means were significantly different from both the healthy and diabetes groups on Cohesion, Independence, and Control. Mean scores on these measures were not significantly different between the anorexia and bulimia nervosa groups, nor between the healthy and diabetes groups.

Univariate ANOVAs showed no significant mean score differences across groups for FES Conflict, Achievement Orientation, Intellectual-Cultural Orientation, Moral-Religious Emphasis, and Organization.

For FES Expressiveness, the anorexia nervosa group mean was significantly lower than for both the healthy and diabetes groups, but not the bulimia nervosa group. The bulimia nervosa group mean was significantly lower than for the healthy group only. The healthy group mean was not significantly different from the diabetes group mean.

For Active-Recreational Orientation, the anorexia nervosa group mean was significantly lower than for the healthy group. Other differences across group means for Active-Recreational Orientation were not significant.

### 8.4.2 Multivariate Analyses of Covariance

#### Introduction

Using the BDI as a covariate, Multivariate Analyses of Covariance (MANCOVAs) were performed to determine overall group differences for each of the other six instruments in the study. Thus, separate MANCOVAs were performed using the EDI-2, MPS, SCANS, TPQ, PBI, and FES. Similarly to the procedure used for the MANOVAs (above), two MANCOVAs were performed using the TPQ, for the four TPQ dimensions, and for the eleven TPQ subscales combined with the Persistence dimension (which includes no subscales). In order to reduce the risk of Type 1 error, univariate ANCOVAs were subsequently performed only on those subscales where the overall MANCOVA was statistically significant.\*

#### MANCOVAs

Table 30 presents MANCOVA statistics for the EDI-2, MPS, SCANS, TPQ, PBI, and FES. The statistics presented are from the Wilk's lambda test for within-subject effects, F values, degrees of freedom, and probability values.

Table 30. MANCOVA statistics for the EDI-2, MPS, SCANS, TPQ, PBI, and FES.

Scale	Wilk's lambda	F	df	p
EDI-2	0.51	2.73	33, 354	<0.0005
MPS	0.68	2.84	18, 354	<0.0005
SCANS	0.84	3.83	6, 258	0.001
TPQ Dimensions	0.69	14.43	4,126	<0.0005
TPQ Subscales	0.67	1.42	36,349	0.061
PBI	0.92	2.78	4,127	0.029
FES	0.77	1.11	30,349	0.318

\* Values are significantly different from each other at  $p < .05$ .

It can be seen from Table 30 that the MANCOVAs were significant for the EDI-2, MPS, SCANS, TPQ Dimensions, and PBI. MANCOVAs were not significant for either the TPQ Subscales or the FES. Consequently, univariate ANCOVAs were not performed for the subscales on these two instruments.

### Univariate ANCOVAs

Considering the univariate ANCOVAs for the five psychometric instruments with significant MANCOVAs (Tables 31 to 35) numerous significant mean differences were found across groups.

### EDI-2

Table 31 presents ANCOVA results for EDI-2 subscales by group.

The univariate ANCOVAs for the EDI-2 (Table 31) revealed that, both the anorexia and bulimia nervosa group mean scores were significantly higher than for both the healthy and diabetes groups on the EDI-2 subscales of Drive For Thinness, Interpersonal Distrust, and Social Insecurity. For the Bulimia and Body Dissatisfaction subscales, the bulimia nervosa group mean was significantly higher than for the other three groups. There were no significant differences across the anorexia nervosa, healthy, and diabetes groups on the Bulimia and Body Dissatisfaction subscale means. For the remaining six EDI-2 subscales, there were no significant mean score differences across groups. There were no significant differences between the healthy and diabetes group means on any of the eleven EDI-2 subscales.

**Table 31.** EDI-2 observed means and adjusted means of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Drive for Thinness	14.9 (11.1) <sup>a</sup>	15.1 (13.2) <sup>a</sup>	4.3 (7.5) <sup>b</sup>	5.4 (7.9) <sup>b</sup>	6.3	.001
Bulimia	4.0 (1.2) <sup>a</sup>	8.8 (7.5) <sup>b</sup>	1.0 (3.3) <sup>a</sup>	1.5 (3.3) <sup>a</sup>	15.3	<.0005
Body Dissatisfaction	19.0 (15.0) <sup>a</sup>	21.0 (19.0) <sup>b</sup>	11.5 (14.9) <sup>a</sup>	12.2 (14.8) <sup>a</sup>	2.6	.053
Ineffectiveness	15.8 (9.2)	12.2 (8.9)	1.9 (7.5)	2.8 (7.1)	1.1	.361
Perfectionism	10.6 (8.5)	8.0 (7.0)	3.9 (5.6)	5.0 (6.3)	1.1	.371
Interpersonal Distrust	7.9 (5.8) <sup>a</sup>	7.4 (6.4) <sup>a</sup>	2.3 (4.1) <sup>b</sup>	2.1 (3.4) <sup>b</sup>	4.0	.009
Interoceptive Awareness	14.0 (8.7)	12.2 (9.6)	3.2 (7.7)	2.9 (6.4)	2.4	.072
Maturity Fears	6.6 (4.1)	4.8 (3.5)	2.7 (4.8)	3.1 (4.7)	0.5	.695
Asceticism	11.2 (7.7)	9.8 (8.1)	3.1 (6.0)	4.3 (6.5)	1.1	.355
Impulse Regulation	8.1 (4.3)	7.1 (5.2)	2.2 (5.4)	2.7 (5.1)	0.3	.829
Social Insecurity	11.1 (7.7) <sup>a</sup>	9.5 (7.8) <sup>a</sup>	2.3 (5.2) <sup>b</sup>	3.7 (5.9) <sup>b</sup>	2.7	.051

Values shown as observed means, adjusted means in parentheses ( ).  
Adjusted means with different superscripts are significantly different from each other.

MPS

Table 32 presents ANCOVA results for MPS subscales by group.

Table 32. MPS observed means and adjusted means of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Concern over Mistakes	36.8 (31.9) <sup>a</sup>	33.1 (30.7) <sup>a</sup>	17.4 (21.5) <sup>b</sup>	20.2 (23.3) <sup>b</sup>	8.8	<.0005
Personal Standards	30.0 (29.4) <sup>a</sup>	28.2 (27.9) <sup>a</sup>	19.1 (19.6) <sup>b</sup>	21.5 (21.9) <sup>b</sup>	11.0	<.0005
Parental Expectations	16.4 (16.1) <sup>a</sup>	14.0 (13.9) <sup>a,b</sup>	10.1 (10.4) <sup>c</sup>	11.2 (11.4) <sup>b,c</sup>	3.4	.020
Parental Criticism	14.4 (13.1) <sup>a</sup>	11.1 (10.5) <sup>b</sup>	6.2 (7.3) <sup>c</sup>	7.5 (8.3) <sup>c</sup>	5.9	.001
Doubts about Actions	15.9 (13.0)	14.2 (12.8)	9.4 (11.8)	9.5 (11.4)	1.0	.386
Organization	24.3 (24.9)	22.8 (23.0)	23.6 (23.1)	23.9 (23.5)	0.6	.639

Values shown as observed means, adjusted means in parentheses ( ).

Adjusted means with different superscripts are significantly different from each other.

Considering the univariate ANCOVAs for the MPS subscales (Table 32), both the anorexia and bulimia nervosa group mean scores were significantly higher than for both the healthy and diabetes groups on the subscales of Concern over Mistakes, Personal Standards, and Parental Criticism. Also for the Parental Criticism subscale, the anorexia nervosa group mean score was significantly higher than for the bulimia nervosa group. There were no significant mean differences between the healthy and diabetes groups on any

of the six MPS subscales. For the Parental Expectations subscale means, the anorexia nervosa group scored significantly higher than both the healthy and diabetes groups, but not the bulimia nervosa group. The bulimia nervosa group mean was significantly higher than for the healthy group only. The healthy group mean was not significantly different from the diabetes group mean. For both the Organization and Doubts about Actions subscale means there were no significant differences across the four groups.

### SCANS

Table 33 presents ANCOVA results for SCANS subscales by group.

Table 33. SCANS observed means and adjusted means of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
General	56.2	54.0	36.0	37.9		
Dissatisfaction	(46.2)	(49.1)	(44.4)	(44.3)	3.1	.028
Perfectionism	31.8	30.2	25.4	28.4		
	(31.6) <sup>a</sup>	(30.1) <sup>a,b</sup>	(25.6) <sup>c</sup>	(28.5) <sup>b</sup>	4.8	.003

Values shown as observed means, adjusted means in parentheses ( ).

Adjusted means with different superscripts are significantly different from each other.

Univariate ANCOVAs (Table 33), for SCANS General Dissatisfaction showed no significant mean score differences across groups. For the Perfectionism subscale, the anorexia and bulimia nervosa group means were not significantly different. The Perfectionism subscale mean for the healthy group was significantly lower than for the other three groups. The mean Perfectionism score for the diabetes group was significantly lower

than for the anorexia nervosa group, but not significantly different from the bulimia nervosa group mean.

### TPQ

Table 34 presents ANCOVA results for TPQ dimensions by group.

Table 34. TPQ observed means and adjusted means of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Novelty Seeking Total	12.6 (13.3)	15.0 (15.3)	16.6 (16.0)	17.3 (16.9)	0.7	.389
Harm Avoidance Total	25.1 (22.1) <sup>a</sup>	24.8 (22.0) <sup>a</sup>	14.8 (17.5) <sup>b</sup>	17.2 (20.9) <sup>b</sup>	58.7	<.0005
Reward Dependence Total	12.0 (12.6)	11.9 (12.2)	14.9 (14.4)	14.8 (14.4)	1.7	.200
Persistence	6.6 (6.4)	5.8 (5.7)	4.4 (4.5)	5.2 (5.3)	0.4	.513

Values shown as observed means, adjusted means in parentheses ( ).

Adjusted means with different superscripts are significantly different from each other.

The univariate ANCOVAs for the TPQ Dimensions (Table 34), showed no significant mean differences across groups for Novelty Seeking, Reward Dependence, and Persistence. For the TPQ Harm Avoidance Dimension, both the anorexia and bulimia nervosa group means were significantly higher than for both the healthy and diabetes groups. Mean differences were not significant between the anorexia and bulimia nervosa groups, nor between the healthy and diabetes groups.

PBI

Table 35 presents ANCOVA results for PBI scales by group.

**Table 35.** PBI observed means and adjusted means of women with anorexia nervosa (AN), bulimia nervosa (BN), healthy women (H), and women with diabetes (D).

Variable	AN (N=25)	BN (N=32)	H (N=25)	D (N=53)	F	p
Maternal Care	20.2 (23.0) <sup>a</sup>	20.6 (22.0) <sup>a</sup>	29.9 (27.6) <sup>b</sup>	26.8 (25.0) <sup>a,b</sup>	5.2	.024
Maternal Protection	19.9 (17.3) <sup>a,b</sup>	19.6 (18.3) <sup>a</sup>	9.8 (11.9) <sup>c</sup>	13.6 (15.2) <sup>b</sup>	5.2	.024
Paternal Care	19.1 (19.9) <sup>a</sup>	18.1 (18.6) <sup>a</sup>	25.7 (24.2) <sup>b</sup>	23.3 (22.0) <sup>a,b</sup>	0.0	.025
Paternal Protection	17.3 (15.2)	17.4 (16.4)	11.5 (13.3)	12.7 (14.1)	3.0	.085

Values shown as observed means, adjusted means in parentheses ( ).

Adjusted means with different superscripts are significantly different from each other.

Univariate ANCOVAs for PBI Maternal and Paternal Care (Table 35) showed that both the anorexia and bulimia nervosa group means were significantly lower than for the healthy group, but not the diabetes group. Differences between the healthy and diabetes group means for Maternal and Paternal Care were not significant. On the Maternal Protection subscale, the healthy group mean was significantly lower than for the other three groups. Mean differences between the anorexia and bulimia nervosa groups were not significant. The diabetes group mean for Maternal Protection was significantly lower than for the bulimia nervosa group, but not the anorexia nervosa group. For Paternal Protection, univariate ANCOVAs showed no significant differences across groups.



## 8.5 SECTION FOUR: DISCRIMINANT FUNCTION ANALYSIS

### 8.5.1 Introduction

Discriminant function analysis (DFA) was performed using the SAS System (SAS Institute Inc.), to identify variables that best discriminated between the respondent groups in the study. Based on the theory (outlined above) and statistical results, numerous variables were entered, both on their own, and in certain combinations, into the DFA. In light of the Perfectionism Chapter, and Family Studies Chapter (above), perfectionism, and family interaction, variables were a primary focus. DFA was also performed to identify which combination of variables best discriminated between the eating disordered and non-eating disordered groups.

### 8.5.2 Four Group Classification

The initial DFA was performed using numerous variables, from all seven questionnaires in the study, to assess if cases could be adequately classified into their four respondent groups (i.e., anorexia nervosa, bulimia nervosa, healthy, and diabetes). Results indicated that questionnaire responses proved ineffective in reliably discriminating membership into the four groups.

Table 36 presents some typical examples of percentages of cases correctly classified into each of the four groups. These represent a broad cross-section of findings, including perfectionism, temperament, family, depression, and eating disorder measures. Examples of DFA employing both single variables and combinations of variables are presented.

Table 36. DFA percentages correctly classified by group.

Variable Name(s)	Anorexia	Bulimia	Healthy	Diabetes
SCANS Perfectionism	24	0	24	87
SCANS General Dissatisfaction	20	75	0	79
TPQ HA1: Anticipatory Worry	44	72	0	75
FES Cohesion	0	47	0	78
BDI	56	47	0	93
Disordered Eating	0	81	0	91
MPS Concern over Mistakes, and BDI	56	66	0	89
FES Cohesion, Expressiveness, and Conflict	36	34	32	67

From Table 36 it can be seen that the classification accuracy is low, especially for the anorexia nervosa and healthy groups. For almost all variables (whether single or in combination) the percent correctly classified into the healthy group was 0. Rare exceptions to this were SCANS Perfectionism, and the relationship dimension of the FES (i.e., FES Cohesion, Expressiveness, and Conflict combined). However, these two measures discriminated poorly for all groups except the diabetes group (Table 36). Correct classification percentages were more stable for the bulimia group than for the anorexia nervosa and healthy groups, and consistently good for the diabetes group (Table 36). These results indicated that it may be more appropriate to merge the anorexia and bulimia nervosa groups into one eating disordered group and the healthy and diabetes groups into one non-eating disordered group. This reduction of the original four groups into a two group classification may be justified as the women with anorexia nervosa and women with bulimia nervosa had all been diagnosed as

suffering from an eating disorder, whereas the women with diabetes and the healthy women had in common that they had not been diagnosed as suffering from an eating disorder.

### 8.5.3 Two Group Classification

Due to the ineffectiveness of the four group classification, DFA was performed to identify the variables which most effectively discriminated between the eating disordered and non-eating disordered groups. The eating disordered group ( $N = 57$ ) combined all cases in the anorexia nervosa group ( $N = 25$ ) and the bulimia nervosa group ( $N = 32$ ). The non-eating disordered group ( $N = 78$ ) combined all other cases, that is, the healthy group ( $N = 25$ ) and the diabetes group ( $N = 53$ ).

A correlation matrix was computed to ascertain which variables correlated most strongly with eating disorder category (i.e., eating disordered or non-eating disordered). All 51 variables from all scales and subscales of all seven questionnaires in the study were included, except for Part 1 of the EDI-2 (i.e., EDI-2 SC). From the correlational matrix it was decided to exclude those variables from the discrimination that correlated  $<.30$  with eating disorder category. All remaining variables were then included in the DFA.

### 8.5.4 Classification By Perfectionism Variables

As the role of multidimensional perfectionism in eating disorders was the primary focus of this study, all perfectionism variables\* were employed in a DFA examining the discrimination between eating disordered and non-eating disordered groups. The perfectionism variables were from three of the seven questionnaires in the study: MPS, SCANS, and EDI-2.

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\* All perfectionism variables in the study correlated  $>.30$  with eating disorder category.

Table 37 presents the percentages and numbers of cases correctly classified as either eating disordered or non-eating disordered for all perfectionism variables in the study.

Table 37. DFA percentages and numbers correctly classified for perfectionism variables.

Variable Name	Eating Disordered (N=57)		Non-Eating Disordered (N=78)		Kappa*
MPS Concern over Mistakes	88	(50)	89	(69)	.76
MPS Personal Standards	83	(47)	82	(64)	.64
MPS Parental Expectations	51	(29)	80	(62)	.31
MPS Parental Criticism	68	(39)	86	(67)	.55
MPS Doubts about Actions	79	(45)	81	(63)	.59
MPS Total	88	(50)	90	(70)	.77
SCANS Perfectionism	53	(30)	83	(65)	.37
SCANS General Dissatisfaction	81	(46)	86	(67)	.67
SCANS Total	83	(47)	87	(68)	.70
EDI-2 Perfectionism	51	(29)	76	(59)	.27

N values shown in ( )

\*Kappa =  $\frac{\text{observed proportion} - \text{chance agreement}}{1 - \text{chance agreement}}$

For comparison, kappas >0.75 represent excellent agreement, from 0.40-0.75 fair to good agreement, and <0.40 poor agreement (Fleiss, 1981).

Although the kappa statistic provides a valuable indication of the overall level of between-groups agreement, the primary focus for this study was the percentage of women with eating disorders correctly classified as eating disordered. Therefore the correctly classified percentages in the eating disordered group are discussed at length with supplementary consideration of the strength of kappa values.

Comparison of the classification accuracy of the perfectionism total measures revealed that the MPS Total provided marginally better discrimination than the SCANS Total (Table 37). Although the MPS Total and the SCANS Total discriminated effectively between the eating disordered and non-eating disordered groups, the EDI-2 Perfectionism subscale, and the SCANS Perfectionism subscale, provided poor discrimination (Table 37).

The poor discrimination of SCANS Perfectionism for the eating disordered group, compared to SCANS General Dissatisfaction and SCANS Total, indicates that the important discriminating aspect of the SCANS is Dissatisfaction. Indeed, SCANS General Dissatisfaction was almost as discriminating as the SCANS Total. Even so, more than 15% of cases were not correctly classified using this measure.

Regarding the discriminating power of the MPS questionnaire, not only the MPS Total, but also the single MPS subscale of Concern over Mistakes, discriminated more accurately than any perfectionism measure from the other two questionnaires, for both the eating disordered and non-eating disordered groups. Further, the MPS Personal Standards variable discriminated more effectively than any perfectionism subscale for the other two questionnaires, and was equal to the SCANS Total in classification accuracy for the eating disordered group.

As it was argued in this study that individuals suffering from dysfunctional perfectionism typically have high personal standards in combination with high doubts about actions (see Perfectionism Chapter above), both MPS Personal Standards and MPS Doubts about Actions were entered in combination into the DFA. It was found that MPS Personal Standards combined with MPS Doubts about Actions correctly discriminated 84% of

the eating disordered group and 87% of the non-eating disordered group. This was marginally greater than for either of the variables used independently (Table 37).

#### 8.5.5 Best Discriminating Variables Generally

To identify which variables in the study were the best discriminators generally, between eating disordered and non-eating disordered groups, all single subscales of all seven questionnaires that correlated  $\geq .30$  with eating disorder category were entered into a DFA. In some instances, questionnaire scoring instructions dictate that certain subscales in combination form a Total score. Apart from the MPS and SCANS Total scores (Table 37), total scores are also required for each dimension of the TPQ. Consequently these total scores were also included in the DFA. Another combination of subscales included in the DFA was the first three subscales of the EDI-2, as these comprise a Disordered Eating Index (see Chapter Three above).

Table 38 presents the percentages and numbers of cases correctly classified as either eating disordered or non-eating disordered for the 15 best discriminating single subscales, or total scores of the seven questionnaires used in the study. As discussed above, this study is more concerned with the characteristics of persons with eating disorders than of persons without eating disorders. Hence, correctly classified percentages are presented in descending order of discriminating success for the eating disordered group, rather than the non-eating disordered group, or kappa values between both groups. Arguably a misclassification of a person suffering from an eating disorder is more serious than a misclassification of a person not suffering from an eating disorder because, with respect to psychopathology, a false negative is considered more serious than a false positive. Where two variables discriminate equally for the eating disordered cases, both the

strength of discrimination for the non-eating disordered cases and the kappa values are also considered.

**Table 38.** DFA percentages and numbers correctly classified according to best discriminating variables in the eating disordered group.

Variable Name	Eating Disordered (N=57)		Non-Eating Disordered (N=78)		Kappa*
MPS Total	88	(50)	90	(70)	.77
MPS Concern over Mistakes	88	(50)	89	(69)	.76
TPQ HA1: Anticipatory Worry	84	(48)	78	(61)	.61
SCANS Total	83	(47)	87	(68)	.70
MPS Personal Standards	83	(47)	82	(64)	.64
EDI-2 Drive for Thinness	82	(47)	87	(68)	.70
SCANS General Dissatisfaction	81	(46)	86	(67)	.67
Disordered Eating Index	81	(46)	86	(67)	.67
EDI-2 Social Insecurity	79	(45)	87	(68)	.66
MPS Doubts about Actions	79	(45)	81	(63)	.59
EDI-2 Body Dissatisfaction	79	(45)	69	(54)	.47
BDI	77	(44)	95	(74)	.74
EDI-2 Ineffectiveness	75	(43)	91	(71)	.68
TPQ HA Total	72	(41)	78	(61)	.50
TPQ HA3: Shyness	72	(41)	64	(50)	.35

N values shown in ( ).

From Table 38 it can be seen that the highest percentage of correctly classified cases was observed for the variable MPS Total with MPS Concern over Mistakes discriminating equally well for the eating disordered cases. The third best discriminating variable in the eating disordered group was TPQ HA1 (Anticipatory Worry). However, TPQ HA1 did not discriminate as well for the non-eating disordered group as the variables SCANS Total, MPS

Personal Standards, EDI-2 Drive for Thinness, SCANS General Dissatisfaction, Disordered Eating Index, EDI-2 Social Insecurity, MPS Doubts about Actions, BDI, and EDI-2 Ineffectiveness.

From Table 38 it can be seen that the only highly discriminating variables on the TPQ were TPQ HA1: Anticipatory Worry and TPQ HA Total.\* As these are harm avoidance measures this indicates that TPQ Harm Avoidance is the most powerful of the TPQ measures at discriminating between eating disordered and non-eating disordered groups. Indeed the next highest discriminating TPQ variable, for the eating disordered group, was RD2: Attachment, which correctly discriminated 65% of cases. The RD Total discriminated poorly for the eating disordered group (56% correct) which is not much greater than expected by chance. All other TPQ variables discriminated more poorly than the RD Total.

#### 8.5.6 Family Variables

From Table 38 it can be seen that no parent/family variables were included in those found to best discriminate between eating disordered and non-eating disordered groups. Of the individual parent/family subscales in the study, three were equally accurate at discriminating for the eating disordered group. These were MPS Parental Criticism, FES Cohesion, and FES Expressiveness, all correctly identifying 68% of eating disordered cases as eating disordered. In identifying non-eating disordered cases as non-eating disordered, results were, MPS Parental Criticism (86%), FES Cohesion (75%), and FES Expression (71%).

As the two best discriminating FES subscales (Cohesion and Expressiveness) when combined with FES Conflict form the relationship dimension of the

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\* The kappa value for TPQ HA3: Shyness (.35) indicated poor agreement.



FES (Moos & Moos, 1986), these three variables combined were entered into a DFA. The classification accuracy was 70% for the eating disordered group and 76% for the non-eating disordered group. Therefore the combined relationship dimension variable discriminated only slightly better than the best single discriminating FES subscale.

When the two MPS parent variables (Parental Criticism and Parental Expectations) were entered in combination into a DFA they correctly discriminated 68% of the eating disordered cases and 87% of the non-eating disordered cases. Thus the discrimination was not improved compared to that achieved by Parental Criticism alone (Table 37).

For the eating disordered group, the discrimination of each of the PBI subscales was poor. The PBI subscales which identified most eating disordered cases as eating disordered were Maternal Care and Maternal Protection, which were equally accurate (56%). This is not much greater than could be expected by chance. Entering the PBI variables in the DFA in various combinations did not greatly improve the discrimination. The best result was for all four subscales combined, correctly discriminating 67% of the eating disordered group.

#### **8.5.7 DFA of Best Variable Combinations**

DFA was performed to determine which combination of all variables best discriminated between the eating disordered and non-eating disordered groups. Prior to the DFA, of the 135 cases in the study, the data of the last four cases\* from each of the four groups (i.e., anorexia nervosa, bulimia nervosa, healthy, and diabetes) was split off from the original data set, leaving 119 cases. These 119 cases were the main data set entered into the

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\* Cases were entered into the data set in approximate order of receipt into the study.

DFA. The split-off cases (N = 16) were later used as a replication (test) group. The variables found to be powerful discriminators in the main data set were thus tested to determine whether the estimated discriminant function proved to be useful outside of its sample base.

The 16 single variables correctly classifying >65% of the eating disordered group as eating disordered were entered in combination into the DFA\* of the main data set (N = 119). To avoid repetition of variable data in the covariance matrix, either individual subscale or total scores were entered, rather than both. As the discrimination provided by all of the total scale scores in the study was only marginally better, or poorer, than that of at least one of the relevant subscales (see Table 37 for some examples), it was decided to include only single subscale scores.

Table 39 presents the percentages and numbers of cases correctly classified as either eating disordered or non-eating disordered for both the main data set (N = 119) and the replication data set (N = 16). Correctly classified percentages and numbers are presented separately for 16 variable and 10 variable combinations.

Table 39. DFA classifications for main and replication data sets.

Number of Variables	Number of Cases	Eating Disordered (N=57)		Non-Eating Disordered (N=78)		Kappa*
16 [Main]	119	94	(46)	93	(65)	.86
16 [Replication]	16	88	(7)	100	(8)	.88
10 [Main]	119	94	(46)	93	(65)	.86
10 [Replication]	16	88	(7)	100	(8)	.88

N values shown in ( ).

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\* A lower cut-off point was considered inappropriate as, even at correct classification of 65%, the rate of false negatives is high.

The DFA for the 16 variable combination resulted in a correct classification of 94% for the eating disordered group and 93% for the non-eating disordered group (Table 39). For the replication data set ( $N = 16$ ) correct classification occurred for 88% of the eating disordered group and 100% of the non-eating disordered group (Table 39). Only one case had been misclassified, indicating that the DFA had a high success rate.

The procedure used for the 16 single variables was repeated for the 10 single variables correctly classifying >75% of the eating disordered group as eating disordered. In the main data set this resulted in a correct classification of 94% for the eating disordered group and 93% for the non-eating disordered group (Table 39). For the replication data set correct classification was found for 88% of the eating disordered group and 100% of the non-eating disordered group with only one case being misclassified (Table 39).

The 16 variable and 10 variable combinations were compared according to their success at discriminating between the eating disordered and non-eating disordered groups. It was found that the 16 variable and 10 variable combinations discriminated equally well, for both the eating disordered and non-eating disordered groups in both the main and replication data sets (Table 39). The extra six variables in the 16 variable combination seemed not to add any additional information to the discrimination over the 10 variable combination. Consequently these variables were removed from the DFA. The six variables removed were MPS Parental Criticism, TPQ HA 3: Shyness, FES Cohesion, FES Expressiveness, EDI-2 Interpersonal Distrust, and EDI-2 Interoceptive Awareness. The remaining 10 variables were four EDI-2 variables of Drive for Thinness, Body Dissatisfaction, Ineffectiveness, and Social Insecurity, three MPS subscales of Concern over Mistakes, Personal Standards, and Doubts about Actions, SCANS General Dissatisfaction, BDI, and TPQ HA1 (Anticipatory Worry).

Of the 10 variables entered into the DFA, the removal of each of the 10 variables, one-by-one, was systematically tested. Three of the 10 variables were subsequently eliminated, as the percentage of observations correctly classified did not decrease on their removal. The three variables eliminated were EDI-2 Body Dissatisfaction, SCANS General Dissatisfaction, and TPQ HA1 (Anticipatory Worry). Thus the seven variables remaining in the DFA were three EDI-2 variables of Drive for Thinness, Ineffectiveness, and Social Insecurity, three MPS subscales of Concern over Mistakes, Personal Standards, and Doubts about Actions, and BDI. These seven variables in combination correctly identified 94% of the eating disordered group as being eating disordered in the main data set, with 88% correct in the replication data set (Table 40). For the non-eating disordered group 93% correct classification occurred in the main data set and 100% in the replication data set (Table 40).

Table 40 presents the percentages of cases correctly classified as either eating disordered or non-eating disordered for both the main data set (N = 119) and the replication data set (N = 16) in the DFA. Correctly classified percentages are presented separately for the seven variable and four variable combinations.

Table 40. DFA Classifications for main and replication data sets for the 7 and 4 variable combinations.

Number of Variables	Number of Cases	Eating Disordered (N=57)		Non-Eating Disordered (N=78)		Kappa <sup>a</sup>
7 [Main]	119	94	(46)	93	(65)	.86
7 [Replication]	16	88	(7)	100	(8)	.88
4 [Main]	119	90	(44)	91	(64)	.81
4 [Replication]	16	88	(7)	100	(8)	.88

N values shown in (    ).

This process of systematic removal continued until four variables remained (Table 40). The four variables were EDI-2 Drive for Thinness, EDI-2 Ineffectiveness, MPS Concern over Mistakes, and BDI. These four variables in combination correctly identified 90% of the eating disordered group as being eating disordered in the main data set, with 88% correct in the replication data set (Table 40). For the non-eating disordered group 91% correct classification occurred in the main data set and 100% in the replication data set (Table 40). The percentage correctly classified for the four variables in the main and replication data had an average of 92% correctly classified, indicating that the DFA was very effective in accurately discriminating eating disordered cases from non-eating disordered cases.

Combinations of fewer than four variables, and single variables, were also entered into the DFA. It was found that any fewer than four variables weakened the discrimination between the eating disordered and non-eating disordered groups either in the main data set, the replication data set, or both. For example, the single subscale MPS Concern over Mistakes discriminated 88% of eating disordered cases as eating disordered and 89% of non-eating disordered cases as non-eating disordered (Table 37) prior to the data being split into main and replication data sets. However, when MPS Concern over Mistakes was re-entered into the DFA as a main and replication data sets two of the eight replication data cases in the eating disordered group were misclassified.

#### 8.5.8 Conclusion

From the original 51 variables entered into the correlational matrix, the four variable combination in the DFA (Table 40) very effectively discriminated between eating disordered and non-eating disordered cases, more so than

fewer variables either singly or in combination. However, the seven variable combination (Table 40) provided maximum discrimination between the eating disordered and non-eating disordered groups. The seven variable combination discriminated as effectively as the 10 and 16 variable combinations (Table 39). This indicates that the seven variable combination used in the DFA is likely to provide better discrimination between eating disordered and non-eating disordered groups than the 51 variables originally considered. The seven variables were three EDI-2 variables of Drive for Thinness, Ineffectiveness, and Social Insecurity, three MPS subscales of Concern over Mistakes, Personal Standards, and Doubts about Actions, and BDI.

## CHAPTER NINE

### DISCUSSION AND CONCLUSION

#### 9.1 INTRODUCTION

The main aim of this study was to explore the role of dysfunctional perfectionism in anorexia and bulimia nervosa. Inferences were drawn from previous research about characteristics of women with anorexia and bulimia nervosa and from theories outlining the development of dysfunctional perfectionism. These two major bodies of research were interwoven to identify their common threads. From this, a model was constructed of the development anorexia and bulimia nervosa via a dysfunctional perfectionism pathway. The model, with a social learning orientation, drew together the socio-cultural, family and individual factors, and the primary aspects of their interaction, in the development of anorexia and/or bulimia nervosa. Although this study did not assess aetiological factors, the presence of some features of this model in women with anorexia and bulimia nervosa were tested through the hypotheses generated in this study.

The following discussion is a review of the major empirical findings in this study. Each of the seven instruments used in the study is discussed sequentially, with reference to the study findings, and in relation to the pertinent theoretical and empirical literature.

#### 9.2 BODY WEIGHT AND PURPOSEFUL WEIGHT REDUCTION

The emphasis on body weight and dieting typifying women with anorexia and bulimia nervosa has been well documented (e.g., Polivy & Herman;

Wolf, 1991). Associated with such behaviours, a history of wide fluctuation in weight has been found to be a predisposing factor for eating disorders (e.g., Kendler et al., 1991; Pyle et al., 1981). Consequently, the wide fluctuation found in weight for the women suffering from anorexia and bulimia nervosa was as expected.

In women with diabetes, the finding that highest past BMIs were not significantly different from those of women with bulimia nervosa, but significantly higher than for women with anorexia nervosa and healthy women, corroborates the claims of previous researchers that individuals with diabetes tend to be overweight (e.g., Steel et al., 1989). Further evidence of this was the significantly higher current BMI mean found for the diabetes group compared to the other groups of women.\* Perhaps this reflects some difficulties with food management by women suffering from diabetes. Indeed, several studies have reported that the women with insulin dependent diabetes tend to suffer from obesity partly because of a tendency to avoid undereating due to the risk of hypoglycaemia (Peveler et al., 1992; Steel et al., 1989). Obesity in some women with diabetes may also reflect the dietary restrictions (e.g., control of sugar intake) associated with diabetes care. Several studies (see Chapter Three above) have demonstrated that food restriction, especially of craved foods, is a risk factor for bingeing (e.g., Leon et al., 1985; Polivy & Herman, 1985). This would, to some extent, explain the high percentage of women with diabetes found to have a history of bingeing (45%) compared to healthy women (16%), consistent with previous research (e.g., Stancin & Reuter, 1987). However, this was not reflected in the worst average number of binges per week of those women with diabetes who had binged. In this regard, the women suffering from diabetes were not significantly different from the healthy women.

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\* Although some women suffering from bulimia nervosa may be obese, such women were not included in this study.



In spite of the high percentage of women with diabetes with a history of bingeing, their purging levels were minimal in comparison to both the anorexia and bulimia nervosa groups and similar to those of healthy women. However, according to the claims of previous researchers, the findings regarding purging in women with diabetes may be misleading. Several researchers have claimed that numerous women suffering from diabetes have bulimic symptoms in that, rather than vomiting to get rid of food eaten, they reduce their insulin intake to gain a similar calorie-voiding effect (e.g., Stancin, Link & Reuter, 1989; Steel et al., 1989). Indeed, research on the same sample of women with diabetes used in this study, by staff of the Christchurch Diabetes Centre, revealed 12 of the 69 participants (17%) claimed to be insulin under-dosing (Hockey, Brown & Lunt, 1993). Hockey et al. (1993) described insulin underdosing to control one's weight as "a variant of the self-purging behaviour seen in bulimia nervosa" (p. 475). As the instrument used in the current study to assess self-purging behaviour (EDI-SC) did not assess insulin underdosing it seems that the EDI-SC is not an ideal instrument for assessing the purging levels of women suffering from diabetes. Adaptation of the EDI-SC to account for insulin underdosing, at least when administered to women with diabetes, seems warranted.

In addition to weight fluctuation, dieting and/or frequent exercise have been cited as predisposing factors for eating disorders (e.g., Kendler et al., 1991; Polivy & Herman, 1985; Pyle et al., 1981). The findings in this study corroborate such claims. Thus, it is not surprising that 100% of the women with anorexia and bulimia nervosa had a history of dieting compared to 77% of the diabetes group and 64% of the healthy group. The percentage of women in the healthy group with a history of dieting provides some support for the claims of several researchers that dieting has been accepted by many women as a social norm (e.g., Polivy & Herman, 1992; Singh & Rosier, 1989). It seems likely that the powerful messages conveyed in

Western society (e.g., via the media), that a slim female body is desirable and beautiful, are influencing the dieting practices of most young women (including healthy women). This provides some support for dieting and a slim female body ideal being Western Socio-cultural facets of the model proposed in this study (see Chapter Six above). Indeed, researchers have emphasized the powerful influence of symbolic modelling of a slim female body image in Western society (e.g., Garner et al., 1983).

Predictably, the anorexia and bulimia nervosa groups participated in exercise significantly more frequently than the women with diabetes and the healthy women, with such exercise being considerably more directed towards weight control in the eating disordered groups than in the non-eating disordered groups.\* For, as previous researchers have noted (e.g., Wiseman et al., 1992), physical fitness has been superimposed on the aesthetic ideal of a slim female body.

### 9.3 DEPRESSION

The significantly greater level of depression found in women with anorexia and bulimia nervosa than in healthy women was consistent with previous findings (e.g., Mizes, 1988; Strauss & Ryan, 1987), and is concordant with the model proposed in this study (see Chapter Six above).\*\* There appears to be no previous research comparing individuals with diabetes with individuals with anorexia and/or bulimia nervosa on the BDI. However, as found in previous studies (e.g., Littlefield et al., 1990), depression levels in women

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\* On most measures, in this study, there were no significant differences between both the anorexia and bulimia nervosa groups, or between both the healthy and diabetes groups. Hence, in some instances, the anorexia and bulimia nervosa groups are referred to as the eating disordered groups and the healthy and diabetes groups referred to as the non-eating disordered groups.

\*\* Although in this study, depression was found to be characteristic of women with anorexia and bulimia nervosa, the presence of depression cannot predict cause. Thus for depression, and other features of women with eating disorders (discussed below), the causal path in the proposed model remains speculative.

with insulin dependent diabetes, although higher, on average, were not significantly elevated compared to the mean for healthy women. Thus, the eating disordered women (anorexia and bulimia nervosa) contrasted markedly from the non-eating disordered women (healthy and diabetes) in their severity of depression.

The significant differences in depression scores between the anorexia and bulimia nervosa groups and the healthy and diabetes groups were especially apparent when BDI scores were presented in categories of severity of depression by group (Figure 4 above). With 100% of the anorexia and bulimia nervosa respondents suffering from depression of at least mild severity, and over 60% in both groups being moderately or severely depressed, this contrasted markedly with the severity of depression for the healthy and diabetes groups. With the exception of a few outliers in the diabetes group (Figure 3 above), depression scores were in the normal or mild range for both the healthy and diabetes groups (Figure 4). With such markedly contrasting depression levels between the eating disordered (anorexia and bulimia nervosa) groups and the non-eating disordered (healthy and diabetes) groups, it does not seem surprising that depression scores were found to influence scores on some other measures in this study (discussed below).

In accordance with cognitive-behavioural theories of depression (e.g., Beck et al., 1979), in addition to high levels of depression influencing the responses of women with anorexia and bulimia nervosa on numerous measures in this study, much of their harsh self-evaluation on some of these measures may have influenced their high levels of depression found. Several theorists have argued that negative self evaluation can contribute to depression (e.g., Asarnow & Bates, 1988; Beck et al., 1974). Beck's cognitive theory of depression is based on the notion that depression and behaviour

are a consequence of an individual's interpretation of self, environment, memories, and expectancies (Beck, 1967; 1976).

Beck's model of the *negative cognitive triad* postulates specifically that individuals suffering from depression have negative perceptions of themselves, their experiences, and their future. The self tends to be perceived as inadequate or faulty. Experiences are perceived as negative in that obstacles are considered insurmountable. The negative perception of a situation centres on a feeling of hopelessness (Beck et al., 1979). According to Beck et al. (1979), as a person becomes increasingly depressed s/he focuses on the negative aspects of him/herself or the situation, thus increasing the extent of negative cognitions. Depressed individuals, unable to form realistic cognitions, suffer from rigid systematic errors in their reasoning including arbitrary inference, selective abstraction, overgeneralization, magnification or minimization, personalization, and dichotomous thinking (Beck, 1967).

From a social learning perspective, it is not surprising that individuals suffering from major psychopathology, such as eating disorders, also characteristically suffer from depression because the consequences of eating disorders are likely to have a stressful impact on the lives of sufferers. Indeed, large-scale community studies by Lewinsohn and associates (e.g., Lewinsohn, Hoberman & Rosenbaum, 1988) found that, in addition to negative cognitions, other factors, such as stressful life experiences (both major and minor), were among the predictors of depression.

Although it has been argued here that perceptions of individuals suffering from depression are influenced by their depressed state this in no way implies that differences between anorexia and bulimia nervosa groups compared to healthy and diabetes groups are solely attributable to levels of

depression. It is noted that the high depression means found in the current study, for the eating disordered groups, suggests a high prevalence of comorbid depression may exist in these samples. However, the findings of significant differences between the eating disordered (anorexia and bulimia nervosa) groups and the non-eating disordered (healthy and diabetes) groups on numerous measures, when controlling for depression, provides evidence that neither anorexia nor bulimia nervosa are simply the expression of an affective disorder. Due to a high prevalence of major affective disorder in women with bulimia nervosa, several researchers have argued that bulimia may be an alternate form of affective disorder (e.g., Hudson et al., 1982; Strober et al., 1982; Walsh et al., 1982), whereas other researchers have disputed this notion (e.g., Kendler et al., 1991; Schlesier-Carter et al. (1989). Clearly, studies which do not compare women with bulimia nervosa with healthy women on a number of measures considered characteristic of women with eating disorders, whilst also controlling for depression, cannot explain the numerous measures not mediated by depression on which women with bulimia nervosa are symptomatic.

#### 9.4 EDI-2 MEASURES

The finding of significant differences between women with eating disorders (anorexia and bulimia nervosa) and healthy women on most EDI-2 measures\* is in accordance with those of previous researchers (e.g., Garner et al., 1983; Garner, 1991; Gross et al., 1986). Although previous researchers have used the EDI for women with diabetes, none appear to have compared individuals with anorexia and/or bulimia nervosa with individuals with diabetes. It is noteworthy that the diabetes group followed an identical pattern to the healthy group regarding significant differences from the

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\* Exceptions were that for the Bulimia subscale, by definition, the bulimia group scored significantly higher than the other three groups of women, and for the Maturity Fears subscale the anorexia nervosa group, but not the bulimia nervosa group, scored significantly higher than the healthy group.

anorexia and bulimia nervosa groups on the EDI-2. From this it would seem that, in spite of the considerable fluctuation in BMI scores of the women with diabetes, such women tend to be free of the behavioural and psychological characteristics associated with eating disorders, at least as assessed on the EDI-2.

When the influence of depression was statistically controlled in this study, results revealed that significant differences across groups remained the same for the subscales of Drive For Thinness, Bulimia, Interpersonal Distrust, and Social Insecurity. However, for six EDI-2 subscales, significant differences across groups no longer held when the influence of depression was partialled out. These subscales were, Ineffectiveness, Perfectionism, Interoceptive Awareness, Maturity Fears, Asceticism, and Impulse Regulation.

The changes across some subscales, when depression was controlled for, indicates that although depression does not greatly influence all EDI-2 measures, several are affected by the level of depression in respondents at the time of responding. According to Garner and Olmsted (1984) EDI-2 Ineffectiveness includes facets that reflect negative self-evaluation, inadequacy, and, worthlessness. Such cognitions are all components of Beck et al.'s (1979) model of depression (discussed above). Consequently, it may be that the EDI-2 Ineffectiveness subscale simply measures facets of depression. At the least, it seems that women with anorexia and bulimia nervosa do not indicate themselves to be significantly more ineffective than healthy women and women with diabetes per se, but rather, higher levels of depression may be elevating levels of ineffectiveness. On the other hand, it may also be that high levels of ineffectiveness are elevating levels of depression. Such an association may also hold true between depression and EDI-2 Perfectionism, Interoceptive Awareness, Maturity Fears, Asceticism,

and Impulse Regulation. The lack of significant differences across groups for EDI-2 Perfectionism, when controlling for depression, was unexpected in light of the findings on perfectionism subscales on other instruments in the study. This is discussed in more detail below.

EDI-2 Body Dissatisfaction was also influenced by depression. Whereas ANOVAs showed both the bulimia nervosa and anorexia nervosa groups scored significantly higher on average than the healthy and diabetes groups, when controlling for depression the bulimia nervosa group was significantly higher than the other three groups of women. Thus, it may be that the dissatisfaction that women with anorexia nervosa indicate about their bodies is largely mediated by their high levels of depression (as indicated in the proposed model; see Chapter Six above). Indeed, researchers have found an association between body dissatisfaction and depression (e.g., Laessle et al., 1988; Stice & Shaw, 1994). The distorted cognitions associated with depression may be exaggerating the negative body perceptions of women suffering from anorexia nervosa. This example fits the 'magnification' aspect of Beck's (1967) theory of rigid systematic errors in reasoning, including a negative perception of self, in depressed individuals.

As this study did not assess aetiological factors, it is unable to determine whether the high body dissatisfaction of women with anorexia nervosa is a consequence of their high levels of depression, or if their high levels of depression are in part a consequence of their body dissatisfaction, or if they are reciprocally determined - a plausible social learning theory explanation. Certainly, some theories discussed above imply, or at least acknowledge to some degree, the importance of the attainment of the Western slim ideal female body for women suffering from anorexia and/or bulimia nervosa (e.g., Garfinkel & Garner, 1982; Wolf, 1991). From a social learning or social-cognitive perspective, it seems reasonable to speculate that, given the

societal message that a slim body will enhance one's self worth, women suffering from low self-esteem who incorporate this message in their schema, and diet accordingly, may eventually become dissatisfied and/or depressed. This is concordant with Garner and Garfinkel's (1985) claim that rather than striving for the "perfect body" solving problems associated with low self-esteem, such problems tend to become exacerbated.

The significantly greater drive for thinness in women with anorexia and bulimia nervosa compared to healthy women and women with diabetes, regardless of the influence of depression, reflects an obsessive preoccupation with dieting and exercise typifying such women (as reported above). The more subtle differences among groups for body dissatisfaction than for drive for thinness, when controlling for depression, indicates that the relentless drive for thinness in women with eating disorders is a symptom of problems greater than body dissatisfaction. Perhaps women with eating disorders are not significantly more dissatisfied with their bodies than healthy women, *per se*, but rather are more driven to act on their body dissatisfaction. Such speculation seems plausible given the high levels of dysfunctional perfectionism found to be typical of women with eating disorders.\* Burn's (1983) definition of perfectionism as "the compulsive and relentless pursuit of goals that are unrealistically high" rather than "the healthy pursuit of excellence" (p. 221), seems particularly relevant to the behavioural characteristics of women with anorexia and bulimia nervosa.

Also of note, regarding drive for thinness, it may seem that as the desired BMI found for women with bulimia nervosa was not significantly lower than for healthy women, this is not concordant with the significant differences between these groups in drive for thinness. However, a social learning interpretation of this apparent contradiction may be that women

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\* In the current study, the correlation found between EDI-2 Drive for Thinness and MPS Total perfectionism was .66.



with anorexia and bulimia nervosa have valued and internalized the Western sociocultural ideal of the slim female body significantly more than their healthy peers, and consequently are more preoccupied with imitating the behaviours observed (either directly or vicariously) that are likely to achieve this ideal. Certainly the greater BMI fluctuations found for women with anorexia and/or bulimia nervosa than for healthy women (including significantly lower lowest adult BMIs) is concordant with this argument.

The cognitive characteristics of women with anorexia and bulimia nervosa that remained evident after controlling for depression (Interpersonal Distrust and Social Insecurity), considered together, indicate a reluctance to form, or fear of, close relationships, and that relationships which are formed are usually emotionally distant and insecure. This concurs with numerous clinical observations (e.g., Bruch, 1978; Crisp & Bhat, 1982) and empirical studies (e.g., Garner et al., 1992; Williamson et al., 1993) of impaired social skills in women with anorexia and bulimia nervosa. It is also concordant with the model proposed in this study (see Chapter Six above). Although the data in this study cannot explain the aetiology of interpersonal distrust and social insecurity, it seems noteworthy that Selvini-Palazzoli and Viaro (1988), in their family "game" model of anorexia nervosa (outlined above), included the development of insecure, untrusting, and emotionally distant relationships within the family for women with anorexia nervosa. Viewed from a social learning perspective, Selvini-Palazzoli and Viaro's (1988) model suggests that the social insecurity and mistrust of the ill daughter develops through increasing reciprocal aversive interactions among the mother, father and daughter. Such interactions generate and sustain feelings of rejection and being "let down" by the daughter.

Unfortunately, almost all researchers, using the EDI for women with anorexia nervosa and/or bulimia nervosa, have failed to control for the

influence of depression (e.g., Garner & Van Egeren, 1992; Gleaves & Eberenz, 1993; Williamson et al., 1993). Consequently, the findings of most previous studies may have been biased by the influence of depression on respondent's scores for some EDI subscales. Overall, it appears that the EDI-2 is not a robust measure of significant differences between women with eating disorders and women without eating disorders per se. Certainly the scoring of the EDI-2 does not capture the sensitivity of the of six-point response continua ranging from "always" to "never", as the item scoring ranges from 0 to 3, with reverse scoring on some items. Thus, responses of "always", "usually", and "often", may be scored identically on numerous items as may responses of "sometimes", "rarely", and "never", on other items. Further research, using the BDI (or another reliable measure of depression) as a covariate to compare women with eating disorders with healthy women, is likely to shed further light on this issue.

## 9.5 DYSFUNCTIONAL PERFECTIONISM

The findings, in the current study, on the Frost et al. (1990) MPS clearly differentiated the anorexia and bulimia nervosa groups from the healthy and diabetes groups. Assuming that the 'very high' MPS Total category (see Figure 6 above) represents dysfunctional perfectionism, this suggests that, in the current study, 84% of women with anorexia nervosa and 59% of women with bulimia nervosa suffer from dysfunctional perfectionism, compared to 0% of healthy women and 5% of women with diabetes. Thus, 84% of women with anorexia nervosa and 59% of women with bulimia nervosa may have developed eating disorders via a dysfunctional perfectionism pathway. Perhaps the lower prevalence of dysfunctional perfectionism in the bulimia nervosa group than the anorexia nervosa group reflects the heterogeneity of women with bulimia nervosa. Of note, if the dysfunctional perfectionism cut-off category were extended to include

the 'high' MPS Total category (see Figure 6 above), in the current study dysfunctional perfectionism would be operative in 96% of women with anorexia nervosa, 84% of women with bulimia nervosa, 12% of healthy women, and 22% of women with diabetes.

As pointed out above, the MPS Total score (from which dysfunctional perfectionism was assessed) does not include MPS Organization. Indeed, the non significant differences across groups on the MPS Organization subscale, regardless of the influence of depression, suggest that high organization (i.e., a preference for order and organization) is not a dysfunctional facet of perfectionism, in that it does not differentiate women with eating disorders from healthy women. The weak correlations found between MPS Organization and all other MPS variables, except Personal Standards, for the eating disordered groups, was consistent with this, and with the claims of Frost et al. (1990). As outlined above, in constructing the MPS, Frost et al. (1990) found that the Organization subscale produced the weakest pattern of intercorrelation with the other MPS subscales. Hence, Frost et al. (1990) concluded that Organization is not a central component of perfectionism.

When controlling for depression, the only change for any MPS subscale was that significant differences across groups for Doubts about Actions no longer held. This is concordant with Frost et al.'s (1990) claim that the doubt facet of perfectionism is influenced by depression. The strong positive correlation found in this study between MPS Doubts about Actions and depression (assessed by the BDI) supports this notion. Hence it seems that the model proposed in this study (see Chapter Six above) needs revising to account for the association between Doubts about Actions and depression. Moreover, the hypothesis that the association among BDI and perfectionism measures would be strongest between BDI depression and MPS Doubts about Actions, and weak between BDI depression and MPS Personal

Standards was confirmed.\* In addition to supporting Frost et al.'s (1990) claims of a strong positive association between MPS Doubt about Actions and depression, this finding supports Frost et al.'s (1990) claims of a weak association between MPS Personal Standards and depression (see Perfectionism Chapter above). This study has demonstrated that Frost et al.'s (1990) findings, among healthy respondents, are also applicable to other groups of women, including women with anorexia nervosa, bulimia nervosa, or diabetes.

Whether the doubt facet of dysfunctional perfectionism contributes to the onset of depression, or whether self-doubt is a facet of depression cannot be established from the current study. However, it seems noteworthy that several clinicians have argued (e.g., Hollender, 1965; Missildine, 1963) that the doubt and worry facet of perfectionism may trigger the onset of depression in predisposed individuals. Whilst it is acknowledged that various negative cognitions contribute to the onset of depression (discussed above), an association between dysfunctional perfectionism and the onset of depression is also implicit in Rehm's self-control model of depression. For example, according to Rehm et al. (1979) the low rates of self-reinforcement resulting from excessively stringent criteria for self-evaluation may lead to depression (see Perfectionism Chapter above).

The weaker association found between depression and MPS Personal Standards, than between depression and almost all other perfectionism measures, suggests that high achievement per se is not associated with depression. Indeed, the consistently weak association found between MPS Personal Standards and depression indirectly contributes to the argument, in the Perfectionism Chapter (above), that individuals suffering from

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\* The findings for women with diabetes were an exception to this in that BDI correlated slightly more strongly with Concern over Mistakes than Doubts about Actions for this group.

depression do not characteristically suffer from dysfunctional perfectionism, as they do not characteristically have high personal standards. High personal standards are a facet of dysfunctional perfectionism as measured on the Frost et al. (1990) MPS. Thus, as argued in the Perfectionism Chapter (above), dysfunctional perfectionism may distinguish psychopathology associated with anorexia and/or bulimia nervosa from numerous other forms of psychopathology. However, this argument should be interpreted with caution, as this study did not select depressed individuals as a specific respondent group. A study comparing individuals suffering from depression, who do not also suffer from eating disorders, with individuals suffering from eating disorders, on the Frost et al. (1990) MPS and a depression measure, would enlighten us about this argument.

As only one of the six MPS subscales was mediated by depression, to the extent that significant differences across groups no longer held when depression was controlled, it seems that dysfunctional perfectionism, as assessed by the MPS, is largely independent of the mood of the respondent. This would in part explain the findings of Srinivasagam et al. (1995) that women at least 12 months recovered from anorexia nervosa scored significantly higher than healthy women on the MPS Total, and two of the six subscales. As pointed out (above), had Srinivasagam et al. (1995) not assessed significant differences by an extremely conservative standard it may have been that differences between the recovered anorexia nervosa group and the comparison group would have been significant on all MPS subscales.\* Srinivasagam et al. (1995) suggested that their findings raise the possibility that perfectionism (and several other measures), "are traits expressing an underlying biological vulnerability" (p. 1634). Thus, physical, chemical and neurological factors are implicated as possible precursors for perfectionism.

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\* The p values for the four subscales judged "not significantly different" ranged from 0.02 to 0.009 (Srinivasagam et al., 1995).

Srinivasagam et al.'s (1995) suggestion of a biological vulnerability for perfectionism, raises the contrasting question of environmental influences in the development of dysfunctional perfectionism. It is argued in this study that social learning is likely to play a major role in the development of dysfunctional perfectionism, as assessed by the MPS. The significant differences across groups, in the expected direction, for the MPS subscales of Parental Expectations and Parental Criticism, even when the influence of depression was controlled for, supports this notion to some extent, and is concordant with the model proposed in this study (see Chapter Six above). For, the items assessing MPS Parental Expectations and Parental Criticism generally pertain to perceptions relating to the childhood developmental phase. A typical example is item 22: "I never felt like I could meet my parents' expectations". As discussed above, on the basis of clinical observations, several theorists have speculated that perfectionism is pervasive in the areas of functioning associated with meeting parental demands (e.g., Hollender, 1965; Missildine, 1963).

Clinical observational theories of perfectionism as it pertains to parental demands (discussed above) have claimed that over time the child learns that perfectionism is the route to parental approval (e.g., Halgin & Leahy, 1989; Hollender, 1965; Missildine, 1963). According to such theories the child gradually internalizes this learned behaviour as part of the ego-ideal. Consequently, the child demands perfectionism of him/herself. The perfectionist also believes if s/he can be perfect s/he is more likely to be accepted by significant others (e.g., Halgin & Leahy, 1989; Hollender, 1965). From a social learning perspective, such children behave in response to environmental demands (perceived excessive expectations of significant others), receiving positive reinforcement for their perfectionistic behaviour. Thus, although the perfectionistic behaviour is affected by its contingencies,

the perfectionistic behaviour contributes directly to producing the reinforcement contingencies that impact on it. Of note, the seeking of positive reinforcement from significant others also seems characteristic of a reward-dependent temperament (discussed below).

The importance of acceptance by significant others is a component of the social aspect of dysfunctional perfectionism which has been observed by clinicians (e.g., Hollender, 1965) and measured in empirical research (e.g., Hewitt & Flett, 1991). Hollender (1965), in distinguishing perfectionism from compulsiveness, attributed a social value to perfectionism in that, rather than protecting against disapproval, the perfectionist seeks approval from significant others. Hewitt and Flett's (1991) MPS measure of "Socially Prescribed Perfectionism" assesses a perceived pressure to meet excessively stringent criteria set for oneself by significant others. This would in part explain the significantly higher social insecurity found, in the current study, for women with anorexia and bulimia nervosa than for healthy women and women with diabetes, even after controlling for depression.

Frost et al. (1993) found a significant association between Hewitt and Flett's (1991) MPS Socially Prescribed Perfectionism scale and Frost et al.'s (1990) MPS subscales of Concern over Mistakes, Parental Expectations and Parental Criticism. Parental Expectations and Parental Criticism have been discussed. The association between Socially Prescribed Perfectionism and Concern over Mistakes warrants attention in light of MPS Concern over Mistakes also being significantly higher for women with anorexia and bulimia nervosa compared to healthy women and women with diabetes, when controlling for depression. According to Hewitt and Flett (1991), as individuals who demonstrate high socially prescribed perfectionism feel pressured into meeting stringent criteria perceived to be set for themselves by significant others, this can lead to a perceived inability to please significant others.

From this, failure experiences and negative emotions tend to develop, thus setting the scene for self-belittlement, anxiety and lowered self-esteem. Given this environment, including failure and self-belittlement, in conjunction with a perceived need to meet stringent criteria, it seems reasonable to speculate that high concern over mistakes would be associated with this. Moreover, as Hewitt and Flett (1991) claimed anxiety to be a facet of the failure experiences and negative emotions associated with socially prescribed perfectionism, and assuming that socially prescribed perfectionism is associated with concern over mistakes, it also seems warranted to speculate that high concern over mistakes in women with anorexia and bulimia nervosa may, to some extent, reflect the anxiety disorders claimed to be characteristic of women with eating disorders (e.g., Bulik et al., 1991; Hudson et al., 1991), as indicated in the proposed model (see Chapter Six above).

The finding of significantly higher MPS Concern over Mistakes for women with anorexia and bulimia nervosa compared to healthy women and women with diabetes is consistent with Hollender's (1965) theory of perfectionism. Hollender argued that the perfectionist is "constantly on the alert for what is wrong and seldom focuses on what is right" (p. 95). Of note, this notion is also consistent with cognitive theories of depression in that (as discussed above) depressed individuals tend to focus on the negative aspects of the self or situation (e.g., Beck et al., 1979). However, as significant differences between the eating disordered and non-eating disordered groups remained for MPS Concern over Mistakes when the influence of depression was partialled out, it seems that high concern over mistakes is a characteristic of women with eating disorders somewhat independent of depression.



Further concerning the notion that high concern over mistakes is characteristic of dysfunctional perfectionism, this seems consistent with Heatherton and Baumeister's (1991) claim (within the framework of their 'escape model'; discussed above) that the higher the standards one compares oneself with the more likely one is to fail. It seems likely that low self-efficacy would be associated with this.

In addition to the above speculation that dysfunctional perfectionism is likely to precede the onset of an eating disorder, the findings of Srinivasagam et al. (1995) (discussed above), suggest that dysfunctional perfectionism is a characteristic of women with anorexia nervosa that extends beyond recovery from the maladaptive behavioural components of such a disorder. Certainly, some clinical observations have led to such claims about some women with anorexia nervosa (e.g., Bruch, 1978; Crisp, 1980) and bulimia nervosa (e.g., Root et al., 1986). Empirical research in this area for women suffering from bulimia nervosa seems warranted.

The significant differences across groups on several MPS measures in this study, regardless of the influence of depression, indicates that the Frost et al. (1990) MPS differentiates effectively between eating disordered and non-eating disordered groups. The DFA findings also support this notion. For, of the seven variables which maximally discriminated between the eating disordered and non-eating disordered groups, three were MPS subscales. The seven variable combination used in the DFA found to maximally discriminate between eating disordered and non-eating disordered groups suggests that in further studies these seven variables would discriminate more successfully between eating disordered and non-eating disordered groups rather than using the 51 variables from seven questionnaires entered into the correlational matrix prior to the DFA. The seven variables were three EDI-2 variables of Drive for Thinness, Ineffectiveness, and Social

Insecurity, three MPS subscales of Concern over Mistakes, Personal Standards, and Doubts about Actions, and BDI. Of note, three of the seven questionnaires in the study provided all of these seven variables. As this combination of variables discriminated accurately between eating disordered and non-eating disordered groups even when the N was low (as in the DFA test data) they may be useful clinically as well as theoretically. However, as this study has not been replicated, this notion should be interpreted with caution.

Although the DFA identified seven variables which in combination maximally discriminated between the eating disordered and non-eating disordered groups, this analysis did not account for the influence of depression. Indeed, one of the seven maximally discriminating variables was the BDI measure of depression, and two other measures (MPS Doubts about Actions and EDI-2 Ineffectiveness) no longer provided significant differences across groups when using the BDI as a covariate. As the BDI is partly a measure of general psychopathology, the BDI, and those measures influenced by BDI scores, are arguably likely to provide less insight into the aetiology of eating disorders than are other measures. It may be that the other four variables contributing to the maximum discrimination between the eating disordered and non-eating disordered groups (EDI-2 Drive for Thinness and Social Insecurity, and MPS Concern over Mistakes and Personal Standards) provide more insight into the aetiology of anorexia and bulimia nervosa. It may be that these four variables can facilitate early identification of a significant proportion of women at risk for anorexia and/or bulimia nervosa. Certainly all are salient features of the model proposed in this study (see Chapter Six above). However, as pointed out above, because this study did not assess aetiological factors such conclusions are merely speculative. A longitudinal study, including assessment on the four variables discussed, is likely to provide more insight into this notion.

Also, a large-scale population based study could establish if the group of women scoring extremely high on such variables maps, or is the same as, the group of women found to suffer from anorexia and/or bulimia nervosa. This would provide some indication of the discriminating power of such variables at identifying women at risk for anorexia and bulimia nervosa.

Examination of the conceptual nature of the four variables (discussed above) reveals that, whereas EDI-2 Drive for Thinness is a behavioural measure of disordered eating, a common thread seems apparent among EDI-2 Social Insecurity, MPS Concern over Mistakes, and MPS Personal Standards. All three measures include social comparisons. The EDI-2 Social Insecurity subscale reflects the level of comfort perceived in one's relationships with others. The MPS Concern over Mistakes and Personal Standards items, in addition to being self-reflective, tend to include a socially oriented perspective. For example, MPS Concern over Mistakes item 21 states: "People will probably think less of me if I make a mistake." MPS Personal Standards item 4 states: "If I do not set the highest standards for myself, I am likely to end up a second-rate person." This common thread between these three variables may be a key factor, not only shedding light on the conceptual nature of dysfunctional perfectionism, but also of characteristics of women with anorexia and bulimia nervosa generally.

#### **9.5.1 What does SCANS Perfectionism Measure?**

In the current study, when the influence of depression was partialled out, results revealed that SCANS Perfectionism subscale group differences were unchanged. On the other hand, significant differences across groups for the General Dissatisfaction subscale no longer held when controlling for depression.

The unchanged significant differences across groups for SCANS Perfectionism, when controlling for depression, supports the findings on the MPS instrument that some facets of perfectionism are likely to be independent of the influence of depression. In comparing SCANS Perfectionism findings with those found for the MPS it is apparent that the MPS differentiated between eating disordered groups and non-eating disordered groups more effectively than did SCANS Perfectionism. This is because both the anorexia and bulimia nervosa groups scored significantly higher than both the healthy and diabetes groups on the MPS Total and three of its subscales when depression was controlled for. In comparison, SCANS Perfectionism subscale differences between groups were more subtle. For example, the SCANS Perfectionism scores for the diabetes group were significantly lower than for the anorexia nervosa group, but not the bulimia nervosa group, yet the bulimia nervosa group were not significantly different from the anorexia nervosa group.

The ineffective differentiation between eating disordered and non-eating disordered groups for the SCANS Perfectionism measure is concordant with the findings of the DFA. The poor discrimination found for the SCANS Perfectionism measure, but not for SCANS General Dissatisfaction and the SCANS Total, (discussed below) is noteworthy.

The finding that SCANS Perfectionism discriminated poorly between the eating disordered and non-eating disordered groups could, to some extent, explain the moderate or strong positive associations found between SCANS Perfectionism and MPS Personal Standards and Organization for all groups combined, and for each of the four individual groups. In contrast to this, not even one moderate or strong correlation was found between SCANS Perfectionism and any other MPS subscale for any of the four groups. The consistency of the moderate or strong positive associations between

SCANS Perfectionism and MPS Personal Standards and Organization suggests that SCANS Perfectionism is essentially measuring healthy facets of perfectionism. As outlined above, in developing the MPS, Frost et al. (1990) found that two MPS subscales (Personal Standards and Organization) correlated with *positive* achievement and behaviour. The dimensions of MPS perfectionism found by Frost et al. (1990) to be more highly associated with psychopathology were Concern Over Mistakes, Parental Expectations, Parental Criticism, and Doubts about Actions. Although Frost et al. (1990) found that high Personal Standards also included some unhealthy facets, high Organization was not considered dysfunctional, and therefore was excluded from the overall MPS measure.

In considering the association between SCANS Perfectionism and MPS subscales, it seems noteworthy that Slade and Dewey (1986) developed the SCANS as a measure of eating pathology. Consequently, SCANS Perfectionism was assumed, in the current study, to, in part, tap the dysfunctional facets of perfectionism. However, in light of SCANS Perfectionism more tapping the healthy facets of perfectionism, it seems that SCANS Perfectionism does not assess dysfunctional perfectionism to the extent that the MPS does.

In addition to the SCANS and the MPS, a third measure of perfectionism was included in this study, that is, the EDI-2 Perfectionism subscale. This leads to the question of, which Perfectionism measure used in this study most effectively differentiates women with anorexia and/or bulimia nervosa from women without eating disorders, and how? Whereas SCANS Perfectionism was consistently moderately, or strongly, correlated with only one facet of dysfunctional perfectionism, as measured by the MPS (Personal Standards), EDI-2 Perfectionism was consistently\* moderately or strongly

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\* except for two of the three bulimia group correlations (.33 and .30) slightly below moderate.

positively correlated with three facets of MPS perfectionism (Personal Standards, Parental Expectations and Parental Criticism) for all four groups combined and for each group. This suggests that EDI-2 Perfectionism is a broader measure of perfectionism than is SCANS Perfectionism. However, as differences across groups for EDI-2 Perfectionism were not significant when controlling for the influence of depression, it seems that the EDI-2 does not assess dysfunctional perfectionism as specifically as other measures in the study. Moreover, DFA findings revealed that the EDI-2 Perfectionism subscale discriminated poorly between the eating disordered and non-eating disordered groups. Thus, with regard to perfectionism measures, the MPS was the only instrument in this study which discriminated effectively between the eating disordered and non-eating disordered groups.

The comparisons outlined above, among measures of perfectionism, indicate the strength of multidimensional perfectionism measures, such as the MPS, over unidimensional measures, such as the SCANS or EDI-2 Perfectionism subscales. Whereas unidimensional measures of perfectionism cannot assess healthy and dysfunctional facets of perfectionism independently, the MPS includes subscales which independently assess the more positive facets of perfectionism and other subscales pertaining more to the psychopathology of perfectionism. Consequently, these facets can be analysed independently, thus providing more insight into the dysfunctional nature of perfectionism than can unidimensional measures. Moreover, it seems feasible to speculate that multidimensional measures of perfectionism, such as the MPS, can provide greater insight into the development of dysfunctional perfectionism than can unidimensional perfectionism measures. For, the MPS assesses recollections of the level of perceived parental expectations and parental criticism during a respondent's childhood. Theories of the development of

dysfunctional perfectionism generally claim that perfectionism develops in an environment characterized by an ongoing struggle by the child to please his/her parents (e.g., Hollender, 1965; Missildine, 1963). Although an inherent bias exists in assessing subjective recollections, such perceptions are likely to provide some insight for clinicians useful in the treatment of dysfunctional perfectionism in women suffering from anorexia and/or bulimia nervosa.

### 9.5.2 What does SCANS General Dissatisfaction Measure?

In the current study, of the several variables correlated with discontent measures, it was not surprising that the highest correlations occurred between the two discontent measures (i.e., between BDI and SCANS General Dissatisfaction). The strength of these correlations, for all groups combined and for each group (ranging from .57 to .86), indicates that, as speculated, SCANS Dissatisfaction is likely to be tapping facets of depression. The finding that BDI depression was more strongly associated with SCANS General Dissatisfaction than with any perfectionism measure, for all groups combined and for each group, further contributed to the significance of the BDI/SCANS General Dissatisfaction association. With 74% of the variance being accounted for by the BDI and SCANS General Dissatisfaction correlation, for all groups combined, this leads to the question of whether SCANS General Dissatisfaction is no more than a measure of depression.

Examination of SCANS Dissatisfaction items indicates that these generally assess cognitions such as feeling fed-up or dissatisfied with oneself, one's life, or one's attainments, or feeling out of control. Whereas lack of satisfaction with one's life seems conceptually similar to depression (e.g., as defined by Beck, 1967; 1976), arguably some SCANS items assess a level of

discontent somewhat less severe than depression. However, as the SCANS provides a five-point response continua, it seems reasonable to speculate that an individual suffering from severe depression is more likely to indicate the most extreme form of dissatisfaction than an individual who is not suffering from depression. Thus, it is not surprising that, in the current study, significant differences across groups for SCANS Dissatisfaction no longer held when using BDI scores as a covariate.

Of note, the DFA revealed that SCANS General Dissatisfaction, but not Perfectionism, discriminated effectively between eating disordered and non-eating disordered groups. Hence, SCANS General Dissatisfaction provided most of the discriminating power of the SCANS Total. However, as SCANS General Dissatisfaction is not a measure of perfectionism, it seems that the SCANS provides a unidimensional measure of Perfectionism which is a poor discriminator between eating disordered and non-eating disordered groups.

## 9.6 TEMPERAMENT

### Novelty Seeking

The hypothesis that the bulimia nervosa group would demonstrate higher TPQ Novelty Seeking scores than the anorexia nervosa, diabetes, and healthy groups, was not confirmed. Although on average women with bulimia nervosa scored higher on novelty seeking than women with anorexia nervosa, this did not reach significance. Further, women with bulimia nervosa demonstrated *lower* novelty seeking than women with diabetes and healthy women, although not significantly so. In interpreting this unexpected finding of a lack of significant difference, in comparison to Brewerton et al.'s (1993) findings, the fundamental difference is that the groups in this study were not significantly different from each other in age,



whereas Brewerton et al. (1993) admitted that the significantly greater age of controls in their study was problematic. In light of Cloninger's (1991) claim that all TPQ dimensions, especially NS, correlate with age it seems likely that women with bulimia nervosa do *not* characteristically demonstrate higher TPQ NS than healthy women, as argued by Brewerton et al. (1993).

The discrepant findings between this and Brewerton et al. (1993), regarding novelty seeking, demonstrates the importance of using an age-matched control group in such research. At the time data were gathered in this study no other relevant studies were located which included an age-matched control group. Since the gathering of data for this study, research by Kleifield et al. (1994) found that women with anorexia nervosa scored significantly lower than women with bulimia nervosa and healthy women on the TPQ NS Dimension. The bulimia nervosa and healthy groups were not significantly different from each other. These findings held even when controlling for the influence of depression (Kleifield et al., 1994). Various researchers have reported that depressive symptomology influences scores on the TPQ dimensions differentially (e.g., Mulder & Joyce, 1994; Svrakic et al., 1992). Such studies have consistently found that, of the four TPQ dimensions, HA is the only one to be more than minimally mediated by depression. However, Mulder and Joyce (1994) also found that one NS subscale, Exploratory Excitability, was considerably influenced by depression. The moderate correlation found in this study between BDI and Exploratory Excitability (-.44) is consistent with Mulder and Joyce's (1994) claim.

In the current study, when the influence of depression was partialled out, temperament differences across groups for NS were not significant. However, group differences remained in the expected direction with the anorexia nervosa group being lower than the other three groups for NS. This provides some support for Kleifield et al.'s (1994) findings. The

findings of this study, in conjunction with the findings of Kleifield et al. (1994), provide further evidence that in age-matched samples women with bulimia nervosa are not likely to be significantly higher than healthy women in novelty seeking, as assessed on the TPQ.

At first the similar findings for Bulik et al. (1995) and Brewerton et al. (1993), that women with bulimia nervosa demonstrated higher TPQ NS scores than women with anorexia nervosa may seem inconsistent with the findings of Kleifield et al. (1994), and of the current study, that is, that women with bulimia nervosa did not demonstrate elevated TPQ NS. However, the finding of Kleifield et al. (1994), and of the current study, imply that rather than women with bulimia nervosa being particularly high in novelty seeking, it may be that women with anorexia nervosa are particularly *low* in novelty seeking. An individual who scores high on TPQ NS is considered to be curious, impulsive, quick-tempered and disorderly, as opposed to being reflective, stoical, slow tempered and orderly (Svrakic et al., 1991).

Consistent with the findings for the overall TPQ NS Dimension, the TPQ NS Impulsivity subscale was not elevated in the bulimia nervosa group, but rather, significantly lower in the anorexia nervosa group than the healthy and diabetes groups. As the only other study found including age-matched controls (Kleifield et al., 1994) did not report findings for individual subscales it can only be speculated that the significantly lower NS Dimension score found by Kleifield et al. (1994) in women with anorexia nervosa, than in the women with bulimia nervosa and healthy women, was also reflected on the NS Impulsivity subscale. The question which arises from these findings is: If women with bulimia nervosa do not have elevated scores for TPQ NS Impulsivity are women with bulimia nervosa less impulsive than healthy women?

The notion that women with bulimia nervosa are not excessively impulsive is not only inconsistent with the findings of studies without age-matched controls (e.g., Brewerton et al., 1993; Bulik et al., 1995; criticized above) but also with clinical observations of such women (e.g., Root et al., 1986). The apparent contradiction here may indicate several things. Perhaps the current study, and that of Kleifield et al. (1994), are biased in some respects. For example, in the current study the respondents with eating disorders were recruited from a variety of treatment settings throughout New Zealand, and thus may not have been assessed systematically using structured diagnostic methodology. Consequently, it may be that some sub-clinical cases of eating disorders were diagnosed as suffering from anorexia or bulimia nervosa, and thus included in the study. As a precautionary measure, the completed EDI-2 questionnaires of all participants diagnosed as suffering from anorexia and/or bulimia nervosa were examined by the researcher and a senior clinical psychologist for responses which indicated that they may not meet the DSM-III-R inclusion criteria for such a disorder, with exclusions made accordingly. However, as the EDI-2 is not a diagnostic instrument, responses can only provide an indication of the likelihood that a respondent may be suffering from an eating disorder.

On the other hand, perhaps the observations of clinicians were inaccurate. This seems most unlikely in light of consistent agreement among clinicians. Perhaps the lack of significant differences found reflects the heterogeneity of impulsive symptoms in women with eating disorders in both the current study and that of Kleifield et al. (1994). Indeed, in a series of studies of women within some clinical populations, Lacey and associates (e.g., Lacey & Evans, 1986; Lacey, 1990, 1992) and Fichter, Quadflieg and Rief (1994) identified a sub-group with multiple impulsive behaviours. Women suffering from 'multi-impulsive bulimia' were considered to be

"reminiscent of the borderline or the explosive personality of the ICD-9" (Lacey, 1992, p. 640). In considering these studies in relation to the findings in the current study, for TPQ Impulsivity, perhaps women with multi-impulsive bulimia, rather than women with bulimia nervosa generally, score highly on TPQ Impulsivity.

Another feasible explanation for the low TPQ Impulsivity found in women with anorexia and bulimia nervosa is that impulsivity, as assessed on the TPQ, may reflect a conceptually different temperament to that of the impulsive behaviour style observed in women with bulimia nervosa. Clinicians' references to impulsivity in women with bulimia nervosa have essentially referred to behaviours such as elevated rates of shoplifting, (e.g., Root et al., 1986; Schmidt & Telch, 1990), promiscuity (e.g., Dykens & Gerrard, 1986; Schmidt & Telch, 1990), alcohol and drug abuse (e.g., Dykens & Gerrard, 1986; Kendler et al., 1991), and, suicide or suicidal gestures (e.g., Hudson et al., 1983; Johnson et al., 1982; Schmidt & Telch, 1990).

Examination of the TPQ Impulsivity subscale items revealed that, although some items may assess impulsivity, arguably, other items do not. For example, item 99, states: "I like to pay close attention to details in everything I do". Answering "false" indicates a tendency towards high TPQ NS Impulsivity. The notion of "close attention to details" seems more indicative of the high personal standards or concern over mistakes characteristic of dysfunctional perfectionism than of a lack of impulsive behaviour style. Item 50 states: "I often have to change my decisions because I had a wrong hunch or mistaken first impression" - a "true" response being indicative of TPQ Impulsivity. The indecisive facet of this item leads to the question: Do impulsive individuals characteristically take the time to reflect on and alter their decisions? Changing a decision seems more indicative of the "concern over mistakes" and "doubts about actions" facets of

dysfunctional perfectionism than of impulsivity. Other TPQ Impulsivity items seem repetitive, whether they be negatively or positively scored. Such items are, item 46: "I like to think about things for a long time before I make a decision"; item 55: "I usually think about all the facts in detail before I make a decision"; item 56: "I nearly always think about all the facts in detail before I make a decision, even when other people demand a quick decision"; item 81: "I hate to make decisions based only on my first impressions". Not one of the eight TPQ Impulsivity items assesses specific impulsive behaviours such as substance abuse or shoplifting. Consequently, further research into the validity of the TPQ for assessing impulsiveness, as conceptualized by clinicians (and everyday language), seems warranted.

In contrast to findings regarding TPQ Impulsivity, and corroborating clinical observations of an impulsive behaviour style in women with bulimia nervosa, was the finding (discussed above) that women with anorexia<sup>\*</sup> and bulimia nervosa demonstrated significantly higher EDI-2 Impulse Regulation than healthy women and women with diabetes. Moreover, EDI-2 Impulse Regulation items appear more conceptually similar than TPQ Impulsivity items to clinical impressions of impulsivity as a self-defeating behaviour style, including references to substance abuse and emotional outbursts. For example, item 79 states: "I am prone to outbursts of anger and rage." Item 90 states: "I feel like I must hurt myself and others." Item 72 refers to a "tendency to abuse drugs", and item 81 to a "tendency to abuse alcohol."

As the EDI-2 Impulse Regulation findings no longer held when controlling for depression, it seems that the impulsive behaviour style observed in women with bulimia nervosa (e.g., Root et al., 1986) may, to some extent, reflect the high levels of depression found in such women (e.g., Mizes, 1988;

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\* In this study, women with anorexia nervosa were not excluded on the basis of bulimic symptoms.

Strauss & Ryan, 1987). As discussed above, poor impulse regulation in women with bulimia nervosa is reflected in a self-defeating, impulsive behaviour style such as alcohol and drug abuse (e.g., Dykens & Gerrard, 1986; Kendler et al., 1991) and suicide or suicidal gestures (e.g., Hudson et al., 1983; Schmidt & Telch, 1990). In other words, impulsivity of this sort may be driven by the lack of self-regard, hopelessness and sense of unworthiness characteristic of severe depression. Positive associations between alcohol abuse and depression (e.g., Mirin, Weiss & Michael, 1988), and between suicide and depression (e.g., Wodarski & Harris, 1987) have been well documented. The moderate association (.67) found in this study between EDI-2 Impulse Regulation and depression (assessed on the BDI) concurs with this. Thus, it seems likely that, although women with bulimia nervosa have an impulsive behaviour style, this impulsiveness is mediated to some extent by their depression.

### Harm Avoidance

The finding of significantly higher TPQ Harm Avoidance for women with anorexia and bulimia nervosa than for healthy women and women with diabetes, prior to controlling for depression, corroborated the findings of Brewerton et al. (1993). The DFA finding that TPQ Harm Avoidance was the most powerful of the TPQ measures at discriminating between eating disordered and non-eating disordered groups was concordant with these findings.

When the influence of depression was partialled out, the finding, for TPQ HA, that significant differences across groups remained unchanged, at first seemed contradictory to the claims of researchers that HA is the only TPQ dimension to change according to depressed state (e.g., Mulder & Joyce, 1994; Svrakic et al., 1992). However, although differences remained significant between the eating disordered groups and the non-eating disordered groups,

when controlling for depression, mean scores were considerably changed in the expected directions (i.e., decreased for eating disordered groups and increased for non-eating disordered groups). Thus, it appears that, consistent with Kleifield et al. (1994), depression did influence harm avoidance scores. From this, it seems that harm avoidance is a temperament characteristic of women with anorexia and bulimia nervosa, existent prior to the onset of depression (as indicated in the proposed model; see Chapter Six above), that becomes intensified by the influence of depression. Corroborating the finding that harm avoidance scores in this study were influenced by depression were the moderate or strong correlations found between all HA measures and BDI. This is further supported by the moderate, or strong, associations found between HA and SCANS General Dissatisfaction, for all four groups combined, and for each group. It was argued (above) that SCANS General Dissatisfaction shares conceptual similarities with depression. Moreover, Bulik et al. (1995) also found TPQ HA to be highly correlated with depression.

In considering the association between harm avoidance and perfectionism, in retrospect, the hypothesized positive correlations between TPQ HA and all perfectionism measures did not adequately account for the nature of the constructs. The only two perfectionism measures (MPS subscales of Concern over Mistakes and Doubt about Actions) which consistently correlated moderately positively with TPQ HA across all four groups\* suggests that a harm-avoidant temperament may be a risk factor for the worry and doubt facets of dysfunctional perfectionism. This is consistent with clinical observations of harm-avoidant behaviour\*\* and with

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\* except being only .30 in women with bulimia nervosa.

\*\* As argued (above), although not referred to as such, high harm avoidance is implicit in clinical observational studies reporting overprotection in families of women with anorexia and/or bulimia nervosa (e.g., Minuchin et al., 1978; Root et al., 1986) as harm avoidance is arguably the dominant response style in overprotective families.

Cloninger's description of harm-avoidant behaviour including facets of apprehension and worry (Cloninger, 1987). For example, Cloninger (1987) claimed that "individuals who are higher than average in harm avoidance and average on the other two dimensions are characterized as cautious, tense, apprehensive, fearful, inhibited, shy, easily fatiguable and apprehensive worriers" (p. 576).

The very weak positive correlation between TPQ HA and MPS Parental Criticism, which differentiated the women with bulimia nervosa group from the other groups, seems noteworthy. Perhaps this is a reflection of conceptually different forms of parental criticism for women with bulimia nervosa than for other groups of women. From Root et al.'s (1986), identification of the Chaotic Family as one of three types for women suffering from bulimia (see Family Studies Chapter, above) it could be inferred that women with bulimia nervosa raised in chaotic family environments (unlikely to generate perfectionism) are likely to have suffered from forms of parental criticism which are different from those experienced by other women. For example, parental criticism from a parent suffering from alcoholism may be unpredictable, whereas parental criticism in both perfectionistic and healthy families may be more predictable, but more frequent in perfectionistic families.

The high harm avoidance found in women with anorexia and bulimia nervosa may also reflect the high social insecurity and interpersonal distrust found in such women, in that a harm-avoidant temperament may reflect the difficulties in forming close and intimate relationships claimed to be characteristic of women with anorexia and bulimia nervosa (e.g., Crisp & Bhat, 1982; Lacey, 1982). A high HA score is considered to indicate an individual who tends towards being apprehensive, shy, pessimistic, and



fatiguable (Svrakic et al., 1991). Arguably, the apprehension, shyness and pessimism facets of this may reflect a distrust, or at least, insecurity, about exposing one's feelings to significant others. This notion is consistent with the high interpersonal distrust and social insecurity found on the EDI-2 for women with anorexia and bulimia nervosa. Further support for this argument is provided by the strong positive association found between TPQ HA and Social Insecurity and the moderate positive association found between TPQ HA and Interpersonal Distrust.

Avoidance of close relationships is also consistent with theorizing about dysfunctional perfectionism. Researchers (see Chapter Five above) have argued that, fear tends to block perfectionists' ability to form close and intimate relationships (e.g., Burns, 1980; Missildine, 1963). Rosenthal (1993), addressing the issue of fear in perfectionists, argued that when our cognitions are largely fear oriented we feel more negative, and take fewer risks. This seems to reflect the high HA facets of Anticipatory Worry, Fear of Uncertainty, and Shyness, found in women with anorexia and bulimia nervosa. The dysfunctional perfectionism measures of Doubts about Actions and Concern over Mistakes also seem to reflect the fear of risk taking which conceptualizes the harm avoidance facets of Anticipatory Worry and Fear of Uncertainty. The findings of significant associations between TPQ HA and MPS Doubts about Actions and Concern over Mistakes, respectively, have been discussed (above).

The finding of a characteristic harm-avoidant temperament in women with anorexia and bulimia nervosa seems consistent both with clinical observations of overprotection in families of women with anorexia and/or bulimia nervosa (e.g., Minuchin et al., 1978; Root et al., 1986), and with a social learning interpretation, as reinforcement of harm-avoidant behaviour is likely to characterize overprotective families. This is discussed

further in the Family Factors section (below). According to Cloninger's (1987) TPQ model, aversive conditioning contributes to the development of harm-avoidant behaviour in that individuals exposed to consistent aversive conditioning become more cautious, less exploratory, and, less sensitive to peer pressures. Note that, while arguing for a social learning contribution to the development of a harm-avoidant temperament, the contribution of a genetic predisposition for a harm-avoidant temperament is also acknowledged.

### Reward Dependence

Although it was hypothesized in this study that, for TPQ Reward Dependence, both anorexia and bulimia nervosa group means would be significantly higher than both healthy and diabetes group means, this was not confirmed. Even more unexpected was the finding of significantly *lower* TPQ Reward Dependence in both the anorexia and bulimia nervosa groups than in both the healthy and diabetes groups. When the influence of depression was partialled out RD differences across groups no longer held. Thus, even when controlling for depression the hypothesis that, for TPQ Reward Dependence, both anorexia and bulimia nervosa group means would be significantly higher than both healthy and diabetes group means, was not confirmed. Consistent with these findings, Kleifield et al., (1994),\* although finding no significant differences across groups, on TPQ RD, found that anorexia and bulimia nervosa groups demonstrated lower RD than healthy controls, both prior to and when controlling for the influence of depression.

These findings, that women with eating disorders did not demonstrate elevated levels of TPQ RD, seem inconsistent with Cloninger's (1987) TPQ model which characterized individuals high in RD as "eager to help and

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\* Kleifield et al. (1994) is the only age-matched control study located. It was published since the gathering of data in this study.

please others, ... industrious, warmly sympathetic, sentimental, and sensitive to social cues and personal succor but able to delay gratification with the expectation of eventually being rewarded" (pp. 576-577). According to much of the theorizing about women with anorexia and/or bulimia nervosa, in association with their characteristically high dysfunctional perfectionism (discussed above), one would expect such women to be highly reward-dependent. For example, Hollender (1965) described the perfectionist as one who "primarily seeks acceptance from other people" (p. 94).

Consistent with the mean score findings, indicating that anorexia and bulimia nervosa groups did not have elevated reward-dependent temperaments, the hypothesized positive correlations among TPQ RD and perfectionism measures were almost non-existent. Given Cloninger's (1987) finding that students who scored highly on achievement tests scored higher on TPQ RD than other TPQ dimensions this was unexpected. The almost zero, or negative, correlations between TPQ RD and MPS Personal Standards across all groups was especially surprising, as high achievement seems conceptually related to high Personal Standards. A possible explanation for this is that high achievement and high personal standards may not be conceptually similar in that dysfunctional perfectionists who set excessively high personal standards for themselves tend to fail to meet these excessive standards. This is consistent with the claims of several researchers (e.g., Hollender, 1965; Heatherton & Baumeister, 1991). According to Heatherton and Baumeister's 'escape model', the higher the standards or ideals one compares oneself with the more likely one is to fail to meet these standards or ideals (see Perfectionism Chapter above).

Of note, the only TPQ RD subscale contributing to lower RD, in women with anorexia and bulimia nervosa than in healthy women, was the Attachment

subscale. As Kleifield et al. (1994) did not report findings for individual TPQ subscales,\* no studies with age-matched controls have been located which report TPQ Attachment subscale findings. However, the notion that women with anorexia and bulimia nervosa are low in TPQ Attachment is consistent with the findings of Brewerton et al. (1993). However, as Brewerton et al. (1993) have been criticized (above) for using a significantly older age control group than eating disordered groups their findings must be interpreted with caution.

In interpreting the implications of low attachment in women with eating disorders, the moderate negative correlation found between BDI and TPQ RD Attachment, suggested that the more depressed an individual becomes the less attached s/he becomes, or conversely, the less attached an individual becomes the more depressed s/he becomes. It was speculated from this (see Results Chapter above) that low TPQ RD Attachment (i.e., low social attachment) may reflect the social insecurity and interpersonal distrust characteristic of women with anorexia and/or bulimia nervosa (e.g., Garner et al., 1991; Gleaves & Eberenz, 1993; Williamson et al., 1993).\* \* Indeed, further correlational analysis confirmed this hypothesis, with TPQ RD Attachment correlating strongly negatively with both EDI-2 Social Insecurity and Interpersonal Distrust respectively.

The notion that women suffering from anorexia nervosa are socially detached may, at first, seem inconsistent with the literature regarding dysfunctional perfectionism. Such theories argue that dysfunctional

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\* Kleifield et al.'s (1994) findings for the TPQ RD Dimension were consistent with the current study.

\* \* EDI-2 Social Insecurity measures the level of comfort perceived in one's relationships with others. A high social insecurity score usually reflects tense, insecure and unrewarding relationships with others. EDI-2 Interpersonal Distrust measures a general distancing of emotions from, a lack of trust in, and a reluctance to form close relationships, with others.

perfectionists primarily seek acceptance from significant others (e.g., Hollender, 1965; Missildine, 1963). Indeed, clinical observational studies have also observed such behaviour in women with eating disorders, hence Bruch's (1978) reference to the "good girl". However, theories regarding dysfunctional perfectionism also refer to the difficulties of dysfunctional perfectionists in living up to the perceived expectations set for themselves by significant others (e.g., Hollender, 1965; Missildine, 1963). Negative cognitions associated with this include, fear of rejection, fear of failure, and low self-efficacy. Hollender (1965), and Burns (1980), argued that dysfunctional perfectionists have difficulty accepting praise. According to Hollender (1965), the perfectionist "believes that anyone who praises him [sic] is uncritical, has been duped or is insincere" (p. 99). Moreover, the literature on women with dysfunctional perfectionism (e.g., Hollender, 1965; Missildine, 1963), and on women with eating disorders (e.g., Crisp & Bhat, 1982; Lacey, 1982), claims that such individuals have difficulty forming intimate relationships with others. Consequently, it seems feasible to speculate that women suffering from anorexia and/or bulimia nervosa *do* primarily seek acceptance from significant others through perfectionistic behaviour, but the stress and failure experiences associated with this are likely to reflect detached and socially insecure relationships. It would not be surprising for considerable psychopathology to be associated with such a double bind, of needing positive social reinforcement (via approval) from significant others, and yet avoiding close attachment with significant others.

If women suffering from anorexia and bulimia nervosa are indeed socially detached, this may be a reflection of having grown up in an enmeshed, overprotective family environment which inhibited healthy socialization (discussed below; see PBI). Such an environment has been reported in family studies of women with eating disorders (e.g., Minuchin et al., 1978; Root et al., 1986; Selvini-Palazzoli & Viaro, 1988; see Chapter Four above).

Moreover, the notion of detachment may reflect the emotional distancing observed by Minuchin et al. (1978) in families where a member develops anorexia nervosa. Minuchin et al.'s (1978) description of lack of conflict resolution, implies that the parenting style involves reinforcement of conflict diminishing behaviours and punishment of conflict provoking behaviours. A feature of this behaviour is intense periods of withdrawal, which not only weakens the likelihood of aversive interactions, but also of mutual positive interactions (i.e., emotional distancing). Low attachment in women with eating disorders may also be a reflection of a weakened parent-child bond, speculated in the current study to be a precipitating factor for an eating disorder (see proposed model Chapter Six above). Several researchers have argued that loss or separation from a significant individual in one's life may trigger the onset of an eating disorder (e.g., Pyle et al., 1981; Garfinkel & Garner, 1983 ; see Chapter Three above).

In addition to the conflict between the concepts of attachment and reward dependence in women with anorexia and bulimia nervosa, another criticism of the TPQ RD dimension concerns the finding, in this study (discussed above), that mean group differences for TPQ RD no longer held when controlling for depression. This implies that women with eating disorders are not more or less reward-dependent than women without eating disorders, *per se*, but that depression influences RD scores. Moreover, Kleifield et al.'s (1994) study (published following the gathering of data for this study), comparing eating disordered and healthy groups, also concluded that TPQ RD is mediated by depression. However, this is contradictory to previous claims that of the four TPQ dimensions, HA is the only one to be more than minimally influenced by depression (e.g., Mulder & Joyce, 1994; Svrakic et al., 1992). This discrepancy may be because such studies did not include eating disordered groups. It may be that TPQ RD (as it is defined by Cloninger, 1987) lacks convergent validity. This explanation seems

defensible, in light of Brewerton et al. (1993) and Bulik et al. (1995) reporting contradictory findings on the RD Dimension, for eating disordered groups (see Chapter Three above). An alternative explanation is that the TPQ may not provide a robust measure of reward dependence, *per se*. Certainly the original version of the TPQ (Cloninger, 1987), which included the now independent Persistence Dimension as a RD subscale, was criticized for weak internal consistency (e.g., Kleifield, Sunday, Hurt & Halmi, 1993).

Considering the TPQ RD findings for the current study and that of Kleifield et al. (1994), in light of previous research, perhaps TPQ RD is not as appropriate a measure for women with anorexia and bulimia nervosa as earlier researchers had assumed (e.g., Brewerton et al., 1993). Certainly there seems to be a contradiction in the concept of high attachment being a facet of high reward dependence in women with anorexia and bulimia nervosa, at least as reward dependence has been implicitly conceptualized by numerous researchers (e.g., Hollender, 1965; Missildine, 1963; see Chapter Five above). Consequently, this study does not now conceptualize reward dependence in the same way as Cloninger (1987). Thus, reward dependence is a facet of the model proposed in the current study (see Chapter Six above) which needs revising in light of the study findings. It is suggested that the term "Reward dependent" (in the model) be changed to "Approval dependent". This would avoid confounding the notions (in the model) of "high need for approval" and "sensitivity to criticism" with reward dependence as conceptualized on the TPQ (criticized above).

As with the TPQ NS Impulsivity subscale, further research seems warranted to assess the reliability and validity of the TPQ RD Dimension, especially the Attachment subscale. Meanwhile the conclusions of this study can be no more than speculative. Ideally, such a study would include assessment of the association between the TPQ RD Dimension and Hewitt and Flett's

(1991) MPS dimension of "Socially Prescribed Perfectionism" (i.e., perceived need to meet excessively high expectations believed to be set for oneself by significant others). This is likely to shed further light on the conceptual validity of the TPQ RD.

### Persistence

Although the elevated level of TPQ Persistence found for women with anorexia nervosa was consistent with Brewerton et al. (1993), these findings did not account for the influence of depression. When the influence of depression was partialled out, significant differences across groups no longer held. It seems noteworthy that had Persistence not been removed by Cloninger from its original position as a subscale of the RD Dimension, it would have contributed more than other RD subscales to the notion (now withdrawn) that women with anorexia and bulimia nervosa are characteristically more reward-dependent than healthy women and women with diabetes.

Considering the association between persistence and perfectionism, the moderate positive correlations found between TPQ Persistence and EDI-2 Perfectionism for all four groups combined, and for each group, indicates that EDI-2 Perfectionism is more associated with TPQ-measured persistence than are other perfectionism measures. Given the hypothesized conceptual similarities between persistence and perfectionism, the lack of moderate or strong correlations between TPQ Persistence and any other perfectionism measures, for either the anorexia or bulimia nervosa groups, was unexpected. The moderate positive correlations found between TPQ Persistence and MPS Personal Standards for the non-eating disordered groups, but not the eating disordered groups, suggests that persistence may be associated with personal standards which do not exceed a healthy level rather than with the excessively high personal standards found in women



with eating disorders.\* Perhaps persistence is associated with healthy perfectionism more so than with dysfunctional perfectionism. This would partly explain why, with the influence of depression partialled out, the mean TPQ Persistence scores, in this study, were not significantly higher for the eating disordered groups than for the non-eating disordered groups.

## 9.7 FAMILY FACTORS

### 9.7.1 Parental Bonding

That women with eating disorders reported perceiving significantly lower maternal and paternal care than did healthy women, corroborates the findings of those previous studies which addressed this question using sound methodologies (Calam et al., 1990; Pole et al., 1988; Rhodes & Kroger, 1992). Interpretation of the findings for the Protection dimensions are more complex as the findings of previous studies were inconsistent. Of note, regarding the Protection dimensions, is that the findings in this study, although not consistent with American and British research (e.g., Calam et al., 1990; Pole et al., 1988), are consistent with New Zealand research (Rhodes & Kroger, 1992). Whereas Calam et al. (1990) and Pole et al. (1988) found that fathers, but not mothers, were perceived as overprotective by women with anorexia and/or bulimia, this study, consistent with Rhodes and Kroger (1992), found that anorexia and bulimia nervosa groups perceived both of their parents as more overprotective than did the healthy group.\* \*

### Cultural Aspect of Maternal Protection

The finding, in the current study, that mothers were perceived as more overprotective by women with anorexia and bulimia nervosa than by the

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\* In the current study, women with anorexia and/or bulimia nervosa were found to have significantly higher MPS Personal Standards than healthy women or women with diabetes.

\* \* These differences only reached significance for Maternal Protection.

healthy women, warrants further discussion. In comparison to the Maternal Protection means reported in British studies (e.g., Calam et al., 1990),\* the significant differences found in this study are as much attributable to mothers of healthy women being perceived as less overprotective as they are to mothers of women with anorexia and bulimia nervosa being perceived as more overprotective. As the only study located (in addition to the current one) reporting very low PBI Maternal Protection for healthy women (compared to healthy women in other studies of women with eating disorders) is Rhodes and Kroger's (1992) New Zealand study, a reasonable speculation is that the nature of New Zealand mothering of healthy daughters may be less protective than that of British mothers. Additionally, that Rhodes and Kroger's is the only study (in addition to the current one) to report elevated PBI Maternal Protection means for women with anorexia and bulimia nervosa (compared to other research) implies that New Zealand mothering of eating disordered daughters may be more protective than that of British mothers. Further research in this area may provide valuable information regarding cultural differences in maternal protection. This seems particularly worthwhile since Parker (1983) found that Australian individuals perceived their parents as more protective than British individuals did, thus concluding that the PBI is sensitive to cultural differences.

### Influence of Depression on Perceptions of Parents

When depression was statistically controlled, all PBI probability values were substantially reduced, indicating that depression levels in respondents greatly influenced their perceptions of their parents. This finding is not consistent with that of the only PBI study located which included women with eating disorders and also controlled for depression (Pole et al., 1988). Pole et al.'s (1988) American study of women with bulimia found no effect

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\* Pole et al.'s (1988) American study did not report mean values.

when controlling for depression. However, comparisons between the current study and that of Pole et al. (1988) are difficult due to differing methodologies. For example, whereas the current study compared mean scores across groups, Pole et al. (1988) divided respondents, for comparison, into four quadrants of high and low care and high and low protection. Pole et al. (1988) did not report mean score values either prior to or following controlling for the influence of depression.

In the current study, with the influence of depression partialled out, the Maternal and Paternal Care subscales revealed that both the anorexia and bulimia nervosa groups remained significantly lower than the healthy group, but not the diabetes group. On the Maternal Protection subscale, both the anorexia and bulimia nervosa groups remained significantly higher than the healthy group. The bulimia nervosa, but not the anorexia nervosa group, remained significantly higher than the diabetes group. A further change on the Maternal Protection subscale, when controlling for depression, was that the diabetes group scored significantly higher than the healthy group. The non-significant differences across groups for Paternal Protection remained unchanged when controlling for depression.

#### Women with Diabetes

As it appears that no published studies have used the PBI for women with diabetes, the findings regarding women with diabetes are particularly informative. Although not surprising, it is noteworthy that the diabetes group were not significantly different from the healthy group on any PBI measures, prior to controlling for the influence of depression. However, it seems logical that if women with diabetes were to differ significantly from healthy women on any instrument in this study it would be on the instruments measuring perceptions of parents (PBI) and/or family environment (FES). This is because the treatment regime for young women

with diabetes is likely to require considerable parental supervision and possible unwanted interference, especially during childhood years. Indeed, the findings in this study, with the influence of depression partialled out, support such a notion. When controlling for depression, perceptions of maternal protection were not significantly different comparing the diabetes and anorexia nervosa groups, but significantly higher for the diabetes group than the healthy group.

Numerous researchers have investigated mother-daughter relationships in coping with juvenile diabetes (e.g., Bobrow & Avruskin, 1985; Hauser & Solomon, 1985; Pond, 1979; Sargent, 1985). Such studies have consistently found an association between maternal overprotection (among other factors) and poor metabolic control. Moreover, Hauser and Solomon (1985) claimed that frequently the mother suffers from guilt and self-blame for the onset of the diabetes in her daughter. Consequently, such a mother becomes overly-anxious and overprotective towards her daughter. While this may result in more optimal control of the diabetes, some children may rebel or, alternatively, become fearful and overly dependent, thus exacerbating the maternal anxiety and overprotection.

In spite of women with diabetes being similar to women with anorexia nervosa, but not healthy women, regarding perceptions of mothers' protection levels, when controlling for depression, this finding cannot solely be attributed to the nature of the diabetes disorder per se. For, unlike the healthy group in this study, the diabetes group were not screened for eating disorders.\* Thus, any findings, in this study, which differentiated women with diabetes from healthy women should be interpreted considering that a small number of the women with diabetes may have

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\* Lack of screening for anorexia and bulimia nervosa among the women with diabetes in this study was because these women, with IDDM, constituted a population-based sample.

been suffering from an eating disorder. In a study of female adolescents with IDDM, Rodin, Johnson, Garfinkel, Daneman and Kenshole (1986) found that 6.9% suffered from anorexia nervosa and 6.9% from bulimia. The number of women with diabetes in the current study did not warrant a subgroup solely for those women with diabetes who may (according to EDI-2 responses) have suffered from anorexia or bulimia nervosa. According to EDI-2 responses it is likely that, in the current study, four women with diabetes suffered from anorexia or bulimia nervosa, and thus did not bias the diabetes sample.

### Poor Parental Care

Regarding the tendency for perceived poor parental care by the anorexia and/or bulimia nervosa groups, perhaps this reflects parental rejection, or deferral of acceptance, in a child's approval seeking struggle to please his/her parents in the development of dysfunctional perfectionism (as theorized, above). For example, Hollender (1965), in theorizing about the development of dysfunctional perfectionism in children, argued that in an environment of excessive parental expectations, acceptance tends to be conditional on performance, with rejection a likely consequence of an imperfect performance. Similarly, Hamachek (1978) suggested that such children are raised in environments of non-approval, inconsistent approval, or conditional positive approval.

### Association between Parental Care and Perfectionism

In considering the associations found between parental care and dysfunctional perfectionism, the strongest correlations between each of the two parental care measures and perfectionism measures was with MPS Parental Criticism in both instances. This is consistent with the hypothesis that negative correlations between scores on PBI Maternal Care and perfectionism measures, and between PBI Paternal Care and perfectionism

measures, would be especially evident for MPS Parental Expectations and Parental Criticism, although not found for Parental Expectations. These findings support the notion that high parental criticism is associated with low parental care. It also provides some support for validity claims about these measures. As only two published studies have administered the Frost et al. (1990) MPS to participant groups with (or recovered from) anorexia nervosa (Bastiani et al., 1995; Srinivasagam et al., 1995), and no published study has done so for women with bulimia nervosa, the findings in this study strengthen the claims of Frost et al. (1990) regarding the functional application of the MPS instrument.

In addition to being consistent with theories of the development of dysfunctional perfectionism, the perception by women with eating disorders, of poor parental care, is consistent with clinical observations (e.g., Minuchin et al., 1978; Root et al., 1986; Selvini-Palazzoli & Viaro, 1988: see Chapter Four above). Stage Three of Selvini-Palazzoli and Viaro's (1988) model provides an appropriate illustration of perceived poor maternal care. At this stage the Type A daughter is said to resent her mother's attention (previously readily achievable) having become focused elsewhere, often towards a younger sibling. Further, from the daughter siding with her father, as a consequence of lack of maternal attention, (as depicted in Selvini-Palazzoli & Viaro's model), it seems feasible to speculate that aversive behaviour towards the mother will evoke increasingly negative reciprocal interactions, and thus reinforce a daughter's perception that her mother is low in maternal care. Of note, Selvini-Palazzoli and Viaro (1988) also described the alternative, Type B, daughter as siding with the father against the mother, at this stage, believing herself to be a victim of maternal aversiveness. During stage five the daughter feels let down by her father due to lack of support for her diet ploy. Perhaps this is a reflection of perceived poor Paternal Care. As pointed out above, Selvini-Palazzoli and

Viario's (1988) model risks being proved inaccurate, due to its excessive specificity. However, it does provide a possible explanation for the tendency of women with anorexia nervosa, in this study, to perceive their parents as low in care.

### Parental Overprotection

The perceived parental overprotection found in women with anorexia and bulimia nervosa compared to healthy women\* is consistent with clinical impressions (e.g., Minuchin et al., 1978; Root et al., 1986; Selvini-Palazzoli & Viario, 1988; see Chapter Four above). Minuchin et al. (1978) identified overprotectiveness as one of four family characteristics predisposing an individual to anorexia nervosa, whereas Root et al. (1986) identified the Overprotective Family as one of three characteristic family types of women with bulimia. Overlap between Overprotective Family types and other family types (Perfect and Chaotic), noted by Root et al. (1986), has been argued (see Chapter Four above). Minuchin et al.'s (1978) and Root et al.'s (1986) notions of overprotectiveness include extreme parental concern for one's children's well-being. A social learning interpretation of this is that overprotective parents model overprotective parenting styles to their children. Such parents tend to reinforce risk-avoidant behaviours by their children and punish risk taking behaviours. The overprotection becomes accommodated to, and learned by, these children. Moreover, such children are inhibited from sufficiently observing and imitating healthy age-appropriate behaviours modelled outside the family environment. According to Bandura (1986) children in such family environments are likely to become inhibited in self-efficacy development.

As overprotection in families is likely to restrict interactions with wider society, the perception of parental overprotection by women with eating

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\* These differences were only significant for Maternal Protection.

disorders, in this study, is consistent with the finding on the EDI-2 (discussed above) of high social insecurity in such women, regardless of the influence of depression. The moderate positive correlation found between PBI Maternal Protection and EDI-2 Social Insecurity corroborates this. Also, as overprotective parents place undue emphasis on the dangers in society, harm-avoidant behaviours tend to be reinforced. The notion of high harm avoidance in overprotective families is consistent with the finding, in this study, of significantly higher TPQ Harm Avoidance for women with anorexia and bulimia nervosa compared to healthy women and women with diabetes, regardless of the influence of depression. Further support for this notion is provided by the moderate positive correlation found between PBI Maternal Protection and TPQ HA. In light of the focus here on women with eating disorders, it is acknowledged that such findings may not be specific to women with eating disorders. Such associations may also hold true for other forms of psychopathology.

In considering the associations found, in this study, between parental protection and other measures, including perfectionism measures, the greater number of consistent correlations among PBI Maternal Protection and other measures than among PBI Paternal Protection and other measures may merely reflect that a daughter typically spends more time with her mother than with her father throughout her childhood years. The consistently moderate correlations found for each group, except the bulimia nervosa group, between PBI Parental Protection dimensions and MPS Parental Criticism suggests that both mothers' and fathers' criticisms are reflected in their level of protection of their daughter and/or that the level of protection of the daughter is reflected in the level of parental criticism.

It seems noteworthy that the association found between parental protection and parental criticism differentiated women with bulimia nervosa from the



other three groups of women. This further supports the notion (argued above) that parental criticism may be conceptually different in women with bulimia nervosa than in other groups of women, such as in a chaotic family environment, one of three characteristic types, found by Root et al. (1986) for women with bulimia. These findings also support the claims of researchers that women with bulimia nervosa are a more heterogeneous group than women with anorexia nervosa (e.g., Garfinkel & Garner, 1982; Root et al., 1986).

### Limitation of Perceptions of Family Studies

Caution must prevail in interpreting individuals' perceptions of their relationships with their parents. Self-report instruments, such as the PBI, while providing valuable data towards an understanding of the family environment, are not likely to reflect the exact 'picture', even with the influence of depression partialled out. Numerous studies indicate that a depressed state biases recall towards negative events (e.g., Bower, 1981; Clark & Teasdale, 1982; Mineka & Sutton, 1992 - discussed further below).

A further consideration regarding perceptions of family studies is that, although data relating to perceptions of parenting during the first 16 years of life (as provided by the PBI) suggest the occurrence of familial difficulties during the childhood developmental phase relevant to theorized risk factors for anorexia and bulimia nervosa, this must not be misconstrued as constituting aetiological evidence. Only through appropriate objective longitudinal studies of family environments can aetiological evidence be obtained.

### 9.7.2 Family Environment

#### Limitations of the Family Environment Scale (FES)

Before embarking on a discussion of the findings for the FES, the limitations of these findings warrant discussion. Such limitations include all of those described (above) for the PBI. Additionally, FES findings in this study are limited in that, when depression was controlled for using the MANCOVA, no significant differences were detected. Consequently, no univariate ANCOVAs were carried out. Thus, discussions concerning the FES results, unlike those of other instruments used in this study, do not consider the influence of depression.

Recently, Thienemann and Steiner (1993) found no significant differences on FES measures between adolescent females with anorexia and/or bulimia nervosa, with major depression, and, the normative population. Thienemann and Steiner (1993) have been criticized (above) for not recruiting age-matched healthy controls, and for administering the FES to adolescents. However, Thienemann and Steiner's (1993) study is noteworthy in that subdivision of the respondents into groups, according to severity of depression, revealed that depressed women were significantly different from the non-depressed women on several FES measures, regardless of diagnoses. The findings in the current study corroborate Thienemann and Steiner's (1993) findings, to some extent, in that all FES measures that were significantly different between the women with eating disorders and the women without eating disorders correlated either positively or negatively with depression, as assessed on the BDI. Correlations ranged from 0.19 to 0.52, thus being moderate on some measures. Considering Thienemann and Steiner's (1993) findings in conjunction with the findings in the current study, the results for the FES, prior to controlling for the influence of depression, must be interpreted with

extreme caution. Caution must also be exercised in interpreting the facets of the model proposed in this study (see Chapter Six above) that relate to FES measures. Consequently, only the most pertinent findings for the FES are discussed below.

### Family Relationships

The elevated family conflict, combined with low cohesion and expressiveness, perceived by the eating disordered groups in this study, is consistent with the findings of some researchers (e.g., Johnson & Flach, 1985; Ordman & Kirschenbaum, 1986; Stern et al., 1989) but not others (e.g., Kent & Clopton, 1992; Rybicki et al., 1989).<sup>\*</sup> FES Conflict, Cohesion and Expressiveness, in combination, form the relationship dimension of the FES, which essentially measures characteristics associated with interpersonal relationships (Moos & Moos, 1986).<sup>\*\*</sup> Moreover, the relationship dimension of the FES was the most effective of the FES measures in this study at correctly classifying the eating disordered group, thus corroborating the notion that women with anorexia and bulimia nervosa perceive their family environments as elevated on this dimension.

The difficulties in interpersonal family relationships perceived by women with anorexia and bulimia nervosa, in this study, not only corroborates the claims of some empirically based studies, but also those based on clinical observations. For, although high levels of mutual interdependence characterize enmeshed and overinvolved families (Minuchin et al., 1978; Root et al., 1986; Selvini-Palazzoli & Viaro, 1988), it seems feasible to assume that the coercive family processes observed by such clinicians reflect difficulties in family relationships.

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<sup>\*</sup> Such studies did not control for the influence of depression.

<sup>\*\*</sup> For definitions of individual FES scales see Method Chapter above.

The coercive family processes observed in families of women with anorexia and bulimia nervosa seem most overtly reflected in the Conflict facet of the FES relationship dimension. The parent-child coalitions, described by systems theorists (Minuchin et al., 1978; Root et al., 1986; Selvini-Palazzoli & Viaro, 1988) provide a typical example of high family conflict, in that considerable aversive interactions occur between the daughter (who later develops an eating disorder) and one parent, and between the parents themselves. Parent-child coalitions may also reflect the high need for approval theorized to be characteristic of dysfunctional perfectionists. For, in siding with one parent against the other, a child is likely to be rewarded by the parent participating in the coalition. Such a volatile family environment would also explain, to some extent, the high parental criticism (assessed on the MPS) perceived by women with anorexia and bulimia nervosa. Indeed, MPS Parental Criticism was the only perfectionism measure which consistently correlated moderately positively, or negatively, with *all* of the five FES measures that perfectionism was hypothesized to be associated with, across most groups.\* This suggests that the level of perceived parental criticism in a family interacts with other facets of the family environment, thus reciprocally influencing each other.

The notion of low cohesion (i.e., low commitment, help, and support) in families of women with eating disorders seems, to some extent, contradictory with the enmeshment and overprotection observed in such families (e.g., Minuchin et al., 1978). However, it seems feasible to speculate that, in a family environment where a child is inconsistently rewarded and punished, such a family may be enmeshed and yet the child may perceive the degree of parental commitment, help, and support as poor, particularly if parental expectations are excessive. Such speculation is consistent with theories of the development of dysfunctional perfectionism. For example,

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\* These FES measures were high Conflict and Achievement Orientation, and, low Cohesion, Expressiveness and Independence.

Hollender (1965) argued that perfectionism develops in an environment in which children are in an ongoing struggle to meet high parental expectations.

The perception of low familial expressiveness found for women with eating disorders seems consistent with the lack of conflict resolution claimed by Minuchin et al. (1978) to be characteristic of families of women with anorexia nervosa. As discussed (above) when parents persuade their children (via relevant reinforcement and punishment procedures) that family harmony is essential, such children learn to imitate their parents' conflict avoidance behaviours, including emotional withdrawal. Low familial expressiveness seems likely to be reflected in the emotional distancing associated with this. Low expressiveness in families of women with eating disorders is also consistent with some theorizing about perfectionism. For example, Root et al. (1986) claimed that "perfect" families (one of three characteristic types for women with bulimia), in endeavouring to convey a "perfect" image, avoid overt expression of aversive emotions (see Chapter Four above).

### Dependence

As women with eating disorders, in this study, perceived their family environments as low in FES Independence, compared to women without eating disorders, yet did not demonstrate elevated TPQ Dependence, it seems that the construct of low independence, as assessed on the FES, may be conceptually different from high TPQ Dependence. The validity of the TPQ has been criticized (above). On the other hand, the construct of low independence outlined in family systems models of women with eating disorders (e.g., Minuchin et al., 1978; Root et al., 1986) seems similar to the construct of independence measured by the FES. Moreover, low independence in women with anorexia and/or bulimia nervosa is

consistent with the reoccurring claims of other clinicians (e.g., Bruch, 1978; Crisp, 1980). Bruch (1978) went so far as to contend that high dependence in women with anorexia nervosa was, in part, due to maternal intrusiveness. Certainly the perception of women with eating disorders, in this study, of maternal overprotection, although not able to implicate aetiological factors, is consistent with Bruch's notion. For, an overprotective parent is likely to highly reinforce a child for risk avoidant behaviours and negatively or positively punish such a child for steps towards autonomy.

### Control

Similarly to the notion of high dependence, the perceived high control in the family environments of women with eating disorders (in the current study), seems consistent with the parental overprotection perceived by such women. The moderate positive associations found between FES Control and PBI Maternal and Paternal Protection, respectively, provides some support for this notion.

From a social learning perspective, in an overprotective family environment, where a child is reinforced for harm-avoidant behaviour, the parents are likely to have a powerful influence over the child. Consequently, in a facade of concern for the child's welfare, overcontrolling parents may coerce the child into meeting their expectations. Minuchin et al. (1978), claimed that in the characteristic family environment of girls who later develop anorexia nervosa the parents become so overprotective that such daughters become overly self-conscious, and overly concerned with meeting parental expectations.

Perhaps the parent-child coalitions in Selvini-Palazzoli and Viaro's (1988) model of the development of anorexia nervosa also demonstrate highly controlling family environments. In Selvini-Palazzoli and Viaro's (1988)

model the mutual positive reinforcement between father and daughter intensifies over time. Consequently, the father's expectations of the daughter increase, and the daughter is positively reinforced from meeting the increased expectations. According to Minuchin et al. (1978) it is in such a highly controlling family environment that a daughter becomes a perfectionist, because if the daughter meets, or exceeds, parental expectations the parents may reciprocate the positive reinforcement via affection. The daughter has learned to become increasingly dependent on such positive reinforcement from her parents. Of note, Minuchin et al.'s (1978) notion of the development of perfectionism in daughters who later develop anorexia nervosa appears to concur with traditional theories of the development of perfectionism (e.g., Hamachek, 1978; Missildine, 1963). Moreover, this notion is further supported by the finding, in this study, of the perception of elevated parental expectations and criticism by women with eating disorders (as assessed by the MPS).

#### Moral-Religious Emphasis

Findings for FES Moral-Religious Emphasis, although not significantly different across groups, also seem noteworthy in that the slightly lower means in all groups in this study compared with previous studies (e.g., Johnson & Flach, 1985; Stern et al., 1989) may reflect a less moral-religious lifestyle in New Zealand compared to other cultures. Alternatively, or additionally, as the data in this study, were gathered more recently than data in previous studies, the decreased moral-religious emphasis may reflect a changing world-wide trend away from religion during the time period since previous studies.

#### Limited Sensitivity of Family Interaction Measures

Perhaps the inconsistent results of studies using the FES reflects heterogeneity of family environments of women with eating disorders. An

alternative explanation may be that, in light of clinicians observing parent-child coalitions suggesting that women with eating disorders may interact positively on an ongoing basis with one parent, while interacting aversively toward the other parent (e.g., Minuchin et al., 1978; Selvini-Palazzoli & Viaro, 1988), this may confound such women's ability to report global perceptions of the family environments. Surely such women's perceptions of family environments would be more accurately assessed by an instrument that assesses perceptions of both fathers and mothers separately. In this sense, the PBI may be a more appropriate instrument. However, unexpectedly, the DFA did not indicate PBI measures to be effective at classifying women with eating disorders as eating disordered. Studies which have found significant differences between women with eating disorders and healthy women, using the FES, have generally reported such difficulties to be in the relationship dimension of the family. It may be that some women with anorexia and/or bulimia nervosa, who do not report family interaction difficulties, when assessed on the FES, tend to suffer from problems in family relationships which are not applicable to their global family environments. The complexity of such problems may preclude the FES from tapping them.

From a social learning perspective, although the likelihood that family interaction difficulties of women with eating disorders may be perceived by such women as specific to one parent, the application of such perceptions should be interpreted with caution. For, even if a daughter's perceptions of her parents, using the PBI, are accurate, such perceptions cannot be applied to parenting styles within the family generally. As a child is both a product and a producer of her environment, a daughter's interactions with her parents may be more individual-specific than shared-family. Also, within-person differences may occur with parent-daughter interaction changing over time. Thus it may be that parents have interacted with the women in



this study in the manner indicated by the women, but interacted differently with other offspring. Moreover, genetic factors may play a role in the specificity of parent-child interactions. Indeed, on the basis of population-based twin studies, Kendler et al. (1991) and Walters and Kendler (1995), although unable to reach any firm conclusions, identified genetic factors, individual-specific, and familial environmental factors as possible risk factors for the onset of anorexia or bulimia nervosa (see Chapter Three, above).

## 9.8 LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR RESEARCH

### Subject Selection

The current study was criticized (above) in that, due to the selection of participants with eating disorders from various treatment centres throughout New Zealand, it is likely that such women were not assessed systematically using a consistent structured diagnostic methodology. Therefore, it may be that some borderline cases of eating disorders were diagnosed as suffering from anorexia or bulimia nervosa, and thus included in the study. As a precautionary measure, the completed EDI-2 questionnaires of all participants diagnosed as suffering from anorexia and/or bulimia nervosa were examined by the researcher and a senior clinical psychologist for responses which indicated that they may not meet the DSM-III-R inclusion criteria for such a disorder, with exclusions made accordingly. However, as the EDI-2 is not a diagnostic instrument, responses can only provide an indication of the likelihood that a respondent may or may not be suffering from an eating disorder.

A critical factor arose, in that, due to the difficulties of recruiting women with anorexia and/or bulimia nervosa who were not at the time involved in other research, participant numbers were not large. Consequently, results

should be interpreted with due caution. The findings may not be widely generalized and the participants "atypical" to some degree. As the current study appears to be the first to examine the association between facets of multidimensional perfectionism and other variables in women with bulimia nervosa and in women with diabetes, it would be useful to replicate this study with a larger sample of women with eating disorders, systematically assessed using structured diagnostic methodology, and from a common treatment centre.

Further, as the only population-based sample group in the current study was the diabetes group, the findings regarding women with anorexia and/or bulimia nervosa can only be cautiously generalized to women with anorexia and/or bulimia nervosa per se. This tends to be a problem of any research that depends on clinical recruitment in that those who seek treatment may be only the "tip of the iceberg". It may be that individuals who are clinically referred, as in the current study, belong to families with more severe psychopathology than families of individuals who do not present for treatment. Alternatively, it may be not so much the severity of the disorder as the impact of the disorder on other areas of one's life that is associated with seeking treatment. This leads to the question of whether findings of studies among clinically recruited populations can only be generalized to clinical populations. This issue seems more pertinent to women with bulimia nervosa than women with anorexia nervosa, as due to the secretive nature of the binge/purge cycle there may be no overt signs that a woman is suffering from bulimia nervosa. For anorexia nervosa, on the other hand, the emaciated body shape makes it difficult for such a disorder to remain unnoticed by significant others. Consequently, women with anorexia nervosa are less likely to avoid treatment than women with bulimia nervosa.

A final issue concerning participant selection is that, although the current study included a control group of healthy women, the lack of a control group diagnosed with some alternative, non-eating disordered, psychopathology leads to the question of the specificity of the findings to eating disorders. In the current study the issue was raised that some characteristics found in women with anorexia and/or bulimia nervosa have been found in individuals suffering from other psychological disorders (e.g., depression). As it was speculated (above) that dysfunctional perfectionism may not be characteristic of the majority of psychological disorders, to clarify this issue in a future study it would be valuable to compare the individual and family characteristics of women with eating disorders, not only with a variety of other psychopathological groups, but also with women who do not have an eating disorder but suffer from dysfunctional perfectionism.

### Self-Report

In further evaluating the findings of the current study, it cannot be overlooked that the methodology in this study depended on data ascertained from self-report questionnaires. Although self-report is a useful methodology for investigating psychological phenomena, it is limited in that it is solely reliant on respondents' conceptualizations and recollections, and thus subject to certain, but unknown, bias and error. However, although the perceptions of participants cannot be interpreted as actualities, such perceptions are important cognitive factors influencing behaviour patterns. As pointed out (above), it may be that subjective beliefs about aspects of parenting and family experiences are more relevant to the maintenance of psychological disorders than are objective aspects of parental behaviour.

In spite of the methodological difficulties outlined here, the perceptions of an individual, regardless of their accuracy, are vital to the current

psychological state of the individual. For, just as one's cognitions may affect the development of an eating disorder, one's cognitions may also affect recovery from the disorder. Thus, although researchers must be alert to the fundamental differences between subjective and objective reports, individuals' perceptions must not be considered lightly in the understanding of people with psychological disorders. Moreover, whilst the self-reports of women measured in this study cannot prove or disprove the theories of the model presented, they provide sufficient support to justify further testing of the model.

### Retrospective Research

As the current research was retrospective, it may be that in regard to women with eating disorders, rather than only measuring perceptions of the family environment prior to the onset of the disorder, the significant changes which are likely to occur in the families of women following the onset of an eating disorder were also measured. Although the family instruments (PBI and FES) endeavoured to assess respondents' recollections of their families within the first 16 years of life, subjective recall has many inherent limitations. Thus, for a woman with an eating disorder, her perceptions of the family environment prior to the onset of the disorder may be marred by the impact the disorder has had on her family. Moreover, research indicates that retrospective recall is associated with mood state (e.g., Bower, 1981; Burt, Zembar & Niederehe, 1995; Mineka & Sutton, 1992). Such researchers generally claim that individuals are more inclined to attend to and learn about situations that match their mood state. Also, individuals are more likely to recall information and experiences when in a state congruent with the mood they were in when the original memory was acquired. Clearly what is needed is prospective research of a large number of families where one or more individuals are considered to be at risk for the development of an eating disorder.

### Longitudinal Studies

For causal relationships to become clear, longitudinal data are required. Until prospective longitudinal studies occur it is difficult to ascertain with certainty whether factors generated in the model precede the onset of anorexia and/or bulimia nervosa or whether they are a consequence of the eating disorder. However, in view of the low prevalence of eating disorders, such a study among the general population would require an enormous number of participants to ensure an adequate number were recruited who eventually developed an eating disorder, and to allow for a percentage of persons withdrawing from the study. The inherent problems of time and expense of such research suggests that it is unfeasible.

A more sound research methodology for a longitudinal family study is where women perceived at risk for anorexia and/or bulimia could be identified prior to the onset of the disorder. From a social learning perspective, it seems likely that the offspring of women with eating disorders may provide valuable information regarding the aetiology of eating disorders. For, women with disordered eating patterns are likely to model such eating patterns to their offspring. Recently, Scourfield (1995) reported three case studies of abnormal eating behaviour in children of women with anorexia nervosa. Scourfield (1995) described these cases as "examples of maternal anorexia leading to underfeeding of children or anorexia by proxy" (p. 371).

In addition to implicating social learning in the aetiology of eating disorders, it may be that there is a genetic component (as acknowledged above). Perhaps a longitudinal study of the offspring of women with eating disorders can provide a route to selection of a group who are at risk for the onset of an eating disorder. Such a longitudinal study would ideally include

an investigation of the relationship between perfectionistic behaviours and cognitions and the onset of anorexia and/or bulimia nervosa.

### Other Research Suggestions

The role of siblings of women with eating disorders is another area largely lacking in research. Why it is that some women develop eating disorders while their female siblings do not is a question as yet not clearly answered by researchers. Several avenues of research in this field could prove valuable. For example, the findings in this study indicate that a comparison of the perceptions of women with eating disorders with those of their siblings will provide useful information into the individual specific, and shared family, environments of women with eating disorders. Such studies could also focus on ascertaining differential aspects in siblings' demographic and physical characteristics, academic performance, sporting and cultural performance, social environment and so forth. A longitudinal study of relationships between women with eating disorders and their siblings may provide considerable insight into the aetiology of eating disorders.

The influence of depression on characteristics of women with eating disorders is another area warranting further research. If the current study had not included depression as a covariate, especially for those measures known to be mediated by depression, the findings would clearly have been biased by the influence of depression on respondents' scores. As most previous research of women with eating disorders has not controlled for depression, further research seems warranted, using the BDI (or another reliable measure of depression) as a covariate to compare women with eating disorders with healthy women. Other valuable studies associating depression with family environment in women with eating disorders would include studies of the familial history of depression in women with eating disorders compared to healthy women. For, it seems likely that a

history of depression among family members of women with eating disorders may influence their childhood family environments. While acknowledging that depression is likely to include a genetic component, it is argued, from a social learning perspective, that depression is, to some extent, a behavioural response shaped by one's social environment, and, reciprocally, being depressed influences one's social environment (e.g., Hops, 1992).

In addition to the influence of depression on characteristics of women with eating disorders, further research seems warranted into the role of other psychopathological issues in eating disorders. For example, although social anxiety is prevalent in women with eating disorders (e.g., Bulik et al., 1991), the role of social anxiety in the development of eating disorders remains unclear. Bulik et al.'s (submitted) retrospective study reported that the onset of anxiety disorders tended to predate the onset of the eating disorder. However, no published study of anxiety in women with eating disorders has been conducted prior onset of the eating disorder. Hence, research seems warranted that may clearly establish whether social anxiety is a risk factor for eating disorders. Moreover, it seems that there may be some association between social anxiety and dysfunctional perfectionism in that (as argued above; see Perfectionism Chapter) the high rates of social anxiety found in women with eating disorders may reflect the perfectionist tendencies and high need for approval, characteristic of such women. Further investigation into this speculated association seems warranted.

Finally, in speculating that dysfunctional perfectionism is a risk factor for anorexia and bulimia nervosa, it is suggested that future research address treatment issues associated with dysfunctional perfectionism. In discussing treatment of women with anorexia nervosa from a psychoanalytic

perspective, Vath (1982) claimed, "The first issue I usually deal with in my patients is perfectionism (p. 184)."

Arguably, one of the most effective treatment approaches for eating disorders is cognitive behaviour therapy (CBT; e.g., Leitenberg et al., 1984, 1988). Hence it is suggested that future research assess whether CBT for individuals high in dysfunctional perfectionism, specifically addressed at reducing their dysfunctional perfectionism, is successful. If not, this leads to the question of the implications of such a finding. It may be that, to the extent that dysfunctional perfectionism is expressed as clients' irrational beliefs, the dysfunctional perfectionism may be indirectly dealt with in CBT and therefore not need specific attention. For, a major goal of CBT, in addition to producing changes in behaviours, is to elicit change in cognitive processes. For example, a fundamental component of various exposure plus response prevention techniques is to elicit and challenge irrational cognitions during the exposure task (e.g., Leitenberg et al., 1984; Leitenberg et al., 1988). Clearly, challenging irrational beliefs such as "My body must be slim in order for others to accept me" or, "I must be approved of by others in everything I do" would impact on dysfunctional perfectionism.

Also in future research, the role that residual levels of dysfunctional perfectionism play in relapse seems pertinent. Certainly, in light of Srinivasagam et al. (1995) reporting that perfectionism persists in women with eating disorders beyond "recovery" from such disorders, it would seem that dysfunctional perfectionism is likely to play a role in eating disorder relapse. Research of the role of dysfunctional perfectionism in eating disorders also leads to implications for primary prevention.



## 9.9 CONCLUSION

The issues covered in this research have necessitated the drawing on a diverse body of literature in social, behavioural, developmental and personality psychology, psychology of gender, and clinical and medical literature. Only through drawing together pertinent literature from these various fields can we begin to understand the complex nature of eating disorders. Clearly, women suffering from anorexia and/or bulimia nervosa are characterized not only by behavioural manifestations of such disorders including disturbed eating, dieting and exercising patterns, but also by affective and cognitive disturbances including dysfunctional perfectionism and depression. These have implications for understanding the nature, treatment, and prevention, of such disorders.

This study differed from previous studies of women with eating disorders in many ways, not only in the theoretical approach and the central theme of dysfunctional perfectionism, but also in aspects of the methodology and selection of respondent groups. The inclusion of a population-based sample of women with diabetes provided some interesting findings. For example, the significantly higher mean BMI found for the diabetes group, compared to the other groups, indicated that women with diabetes may characteristically experience some difficulties with food management. The high maternal protection perceived by the diabetes group highlighted a similarity among women with diabetes and women with anorexia nervosa which differentiated them from healthy women. It was suggested that high maternal protection in women with diabetes may, to some extent, reflect the necessary parental intrusion in monitoring their daughter's diabetes treatment regime. Thus, in the absence of conspicuous psychopathology in women with diabetes, high maternal overprotection on its own is not likely to be a predictor for general psychopathology or for anorexia and/or bulimia

nervosa. Indeed, overall, the findings in the study regarding women with diabetes clearly demonstrated that such women are characteristically similar to healthy women, rather than women with anorexia and/or bulimia nervosa.

The inclusion, in this study, of an age-matched healthy control group also proved valuable. It was demonstrated that some studies of women with anorexia and bulimia nervosa which failed to include an age-matched healthy control group may be methodologically flawed. For example, Brewerton et al.'s (1993) and Bulik et al.'s (1995) studies, excluding age-matched controls, assumed bulimia nervosa groups to be elevated in TPQ Novelty Seeking because the bulimia nervosa group mean was significantly higher than the anorexia nervosa group mean, and because such a conclusion concurs with clinical observations of an impulsive behaviour style in women with bulimia nervosa. However, the findings of the current study and that of Kleifield et al. (1994) (including age-matched controls) demonstrated that rather than women with bulimia nervosa being *high* in TPQ NS, women with anorexia nervosa are *low* in TPQ NS. As this finding did not concur with clinical observations of an impulsive behaviour style in women with bulimia nervosa the items on the TPQ NS Impulsivity subscale were examined and found to lack the behavioural components of novelty seeking observed by clinicians, and measured on the EDI-2 Impulse Regulation subscale. Hence, the validity of the TPQ NS Dimension was questioned.

The TPQ Reward Dependence Dimension was also criticized in that it may lack convergent validity. Moreover, as women with eating disorders, in this study, did not demonstrate a reward dependent temperament, as conceptualized on the TPQ, this was not only inconsistent with the proposed model (see Chapter Six above), but also seemed inconsistent with

theories of the development of dysfunctional perfectionism that perfectionists primarily seek acceptance from significant others. It seems likely that women with eating disorders *do* primarily seek acceptance from significant others, and thus are "approval dependent" rather than "reward dependent", at least as conceptualized on the TPQ. The essential factor contributing to lack of a reward dependent temperament in eating disordered women appears to be that they are characteristically detached. Hence it was suggested that women with anorexia and bulimia nervosa may characteristically be in a "double bind" of needing social approval, yet being socially detached, thus reflecting considerable psychopathology.

Despite this study exposing flaws in the TPQ instrument, findings for the TPQ HA Dimension, considered in conjunction with previous research, indicated that the TPQ HA Dimension is a reliable measure. The harm avoidant temperament found to be characteristic of women with anorexia and bulimia nervosa provided insight into the association between harm avoidance and parental overprotection and between harm avoidance and dysfunctional perfectionism, with high harm avoidance being associated with the concern over mistakes and doubt facets of dysfunctional perfectionism.

Limitations of another instrument used in this study, the EDI-SC, were also noted. It was suggested that the EDI-SC may require adaptation, at least when administered to women with diabetes, to account for insulin underdosing as a method of weight control.

Another instrument administered in the current study, the PBI, was discussed in relation to Parker's (1983) claims that it may be an instrument sensitive to cultural differences. The findings in the current study, and Rhodes and Kroger's (1992) New Zealand study, supported this notion in

suggesting that New Zealand mothers may tend to be more protective of daughters with eating disorders, yet less protective of healthy daughters, than are British mothers.

Another area of particular importance in the current study was the finding that the high levels of depression characteristic of women with eating disorders are likely to influence their responses on numerous measures, including evaluation of themselves and their families. This highlighted the importance of controlling for the influence of depression when comparing eating disordered groups with other groups. It was further argued that much of the harsh self-evaluation of women with eating disorders is likely to contribute to their depression and that harsh self-evaluation is also conceptually linked to dysfunctional perfectionism in that perfectionists tend to underrate their self-achievements. Despite this association among harsh self-evaluation, depression, and dysfunctional perfectionism, conceptual differences were found between depression and dysfunctional perfectionism. Whereas some facets of dysfunctional perfectionism seem to be strongly associated with depression, others do not. Indeed, as argued above (see Chapter Five), evidence suggests that dysfunctional perfectionism may distinguish psychopathology associated with eating disorders from numerous other forms of psychopathology, including depression. Hence it seems that dysfunctional perfectionism is a characteristic of women with eating disorders that may need addressing independently of treatment for depression. It seems likely that treatment aimed at reducing levels of dysfunctional perfectionism, in reducing harsh self-evaluation, may decrease the severity of depression.

This study also differed from previous research of women with eating disorders in that, although numerous previous studies had recognized perfectionism as a risk factor for anorexia and/or bulimia nervosa (e.g.,

Garner et al., 1983; Gross et al., 1986) little attention had been accorded to the specificity of this association. This study investigated more specifically than any previous study of women with eating disorders the nature of perfectionism and the manner in which it is manifested in such women. The current study was initiated, and data gathered, during a time period when no published studies had examined the multidimensional nature of perfectionism in relation to eating disorders. To date, *no* other study has examined the association between multidimensional perfectionism and bulimia nervosa, and only two published studies have addressed this issue in relation to anorexia nervosa. The first such study, by Bastiani et al., was published in 1995. The current study was the first to demonstrate that the Frost et al. (1990) MPS is applicable to women with bulimia nervosa and women with diabetes. This study identified common facets in theories of the development of eating disorders and of the development of dysfunctional perfectionism. Consequently, a model was proposed of a dysfunctional perfectionism pathway towards anorexia and/or bulimia nervosa. The findings in the current study suggest that a dysfunctional perfectionism pathway to eating disorders was operative in 84% of respondents with anorexia nervosa and 59% of respondents with bulimia nervosa.

In considering the overall strength of the model proposed in the current study (see Chapter Six above), most predicted facets of the model which were tested in this study were confirmed, although some facets of the model may need revising. The salient facets of the model found to be characteristic of women with anorexia and bulimia nervosa were, a harm avoidant temperament, high personal standards, doubts about actions, concern over mistakes, impaired social and emotional growth, a slim female body ideal, body dissatisfaction, and dieting. Family factors were high parental expectations and criticism, low parental care, high maternal protection, high

conflict, low cohesion, and low expressiveness. Also, some of the correlational analyses were consistent with facets of the causal pathways speculated in the model, although, due to the methodology in the current study, aetiology cannot be confirmed. Facets of the model which may need revising are, firstly, the strong association found between MPS Doubts about Actions and Depression, to the extent that significant differences for Doubts about Actions no longer held when controlling for depression, suggests that the arrow (in the model) indicating that doubts about actions contributes to depression, should be bidirectional between these two measures.\* Secondly, due to the lack of finding of reward dependence in women with anorexia and bulimia nervosa (as conceptualized on the TPQ), the term "Reward dependent" should be changed to "Approval dependent". Also, as differences across groups for Paternal Protection were not significant, the "High parental protection" facet of the model may need altering to "High maternal protection" only. Finally, as the MANCOVA for the FES was not significant, when controlling for the influence of depression, findings regarding facets of the model associated with FES measures (i.e., high conflict, low cohesion, low expressiveness) must be interpreted with caution.

In considering the perfectionism measures used in the current study, the findings suggest that multidimensional measures of perfectionism are more applicable to women with eating disorders than are unidimensional measures, in that perfectionism per se is not necessarily problematic. Of the three instruments measuring perfectionism, in this study, the multidimensional perfectionism measure (MPS) was the only such measure to effectively discriminate between eating disordered and non-eating disordered groups. Controlling for depression eliminated significant EDI-2

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\* Although depression was found to mediate other measures in the model, such associations are only indicated if significant differences no longer held when controlling for depression. Arguably, these are the most salient associations with depression in the proposed model.

Perfectionism and SCANS General Dissatisfaction differences across groups. Moreover, the study findings suggest that the SCANS instrument measures more healthy than dysfunctional facets of perfectionism, combined with measuring facets of depression.

Evidence of further support for the value of multidimensional over unidimensional measures of perfectionism was suggested from the MPS findings of perceived excessive parental expectations and criticism during childhood. Although aetiological factors could not be assessed from the data in the current study, the findings suggest that multidimensional perfectionism measures may provide greater insight than unidimensional measures into the development of dysfunctional perfectionism. Indeed, perceived excessive parental expectations and criticism during childhood, considered in light of the theoretical and empirical literature (e.g., Hollender, 1965; Missildine, 1963) suggests that dysfunctional perfectionism, is likely to be a predisposing factor for anorexia and bulimia nervosa. Also, as the findings of Srinivasagam et al. (1995) implicated dysfunctional perfectionism in maintaining the maladaptive cognitions of women with anorexia nervosa beyond "recovery" from the disorder, the likely enduring nature of dysfunctional perfectionism is an important concern. Consequently, it seems reasonable to suggest that treatment programmes for women with eating disorders, in addressing the underlying psychological problems, should pay considerable attention to the cognitive distortions associated with dysfunctional perfectionism. In devising and conducting CBT for clients suffering from eating disorders therapists need to be more sensitive to the presence of dysfunctional perfectionism and thus consider ways of reducing this. As discussed above, this is a treatment area in need of further research. However, it is acknowledged that dysfunctional perfectionism will be more pervasive for some women with anorexia and/or bulimia nervosa than for others.

It seems reasonable to speculate that if dysfunctional perfectionism was no longer a salient characteristic of women suffering from anorexia and/or bulimia nervosa, such women would become less focussed on a slim female body ideal. Thus, the insatiable drive for thinness may also decline. Although, in the current study, it was predicted that drive for thinness would be significantly greater in women with eating disorders than in women without eating disorders, the study was unable to assess to what extent the drive for thinness was "all consuming" in the cognitions and behaviours of women with eating disorders. Certainly though, theories of dysfunctional perfectionism imply that dysfunctional perfectionists never believe that their goals are adequately accomplished. In underrating their accomplishments dysfunctional perfectionists are ever striving to reach unrealistic, if not impossible, goals (Missildine, 1963). If this does occur in the drive for thinness of women with eating disorders, this supports the argument (forwarded above) that dysfunctional perfectionism should be directly addressed in treatment. The relevant cognitive distortions of such women (e.g., the perception of a need to be perfect to be accepted) should be challenged, allowing for a focus on realistic, healthy goals. Surely then such women would become less socially insecure and less self-defeating in their goal for social approval.

In addition to a focus on the treatment of eating disorders an emphasis is needed on education regarding the prevention of eating disorders. Preventive educational programmes, in addition to promoting healthy eating patterns and emphasizing the futility and risks of dieting, should address the dysfunctional facet of perfectionism, that is the fundamental difference between focusing on the positive, rather than the negative, self-defeating, facets of one's accomplishments (Hollender, 1965). For some women it may be that many of the faulty cognitions characteristic of



anorexia and/or bulimia nervosa have been learned prior to the outset of relevant educational programmes. Ideally, the restructuring of such irrational cognitions should be an educational goal before they progress to necessarily becoming a treatment goal.

The socially oriented facets of cognitive measures such as Concern over Mistakes and Social Insecurity suggests that educational programmes could address the social learning components of these variables in facilitating individuals to recognize and challenge the relevant social and peer pressures of Western Society. Such educational programmes are likely to be particularly effective among the female adolescent population as these have been identified in numerous studies as the gender and age group most vulnerable to eating disorders (e.g., Crisp et al., 1980).

As the findings in the current study suggested that women with eating disorders perceive themselves as experiencing family interaction difficulties, this problem also needs addressing. It was theorized in this study that family interaction difficulties, such as poor parental care and high parental criticism, may reflect a child's approval seeking struggle in the development of dysfunctional perfectionism. If family interaction difficulties are associated with anorexia and bulimia nervosa, and with the development of dysfunctional perfectionism, this suggests a treatment and prevention approach which not only addresses cognitive and behavioural issues associated with eating disorders and dysfunctional perfectionism, but also familial issues such as the need for parental care and empathy, whilst also fostering healthy development towards autonomy.

Finally, it seems important to note that the findings in this research are in no way family blaming. Caution should be exercised in suggesting that any family aspect may be aetiological. Although an increased prevalence of

certain characteristics have been found in families of women with eating disorders, anorexia and bulimia nervosa are multidetermined disorders which to some extent reflect the problems of a disordered culture. In contemporary culture for adolescent girls to perceive themselves as overweight and embark on diets is so common that it is considered normal. From a social learning perspective, if we are to reduce the prevalence of anorexia and bulimia nervosa, we must change the current values of our society regarding an unrealistic ideal for women's body shape and an obsessive overemphasis on the achievement of this. Society in general will then benefit from a reduction in psychopathology which will flow from healthier attitudes towards women's bodies.

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## APPENDIX 1

### A STUDY OF PERFECTIONISM IN WOMEN

The major theme in theorizing about the development of perfectionism is that it is a product of perfectionistic and demanding parents (Frost et al., 1991, p. 469).

#### INTRODUCTION

As a follow-up to the main study (above) a small study of perfectionism was carried out. The main purpose of the study was to investigate the extent of dysfunctional perfectionism in women generally, and how dysfunctional perfectionism in women relates to other facets of their lives. The study consisted of two projects. Project One involved the administration of quantitative self-report questionnaires. Project Two, a qualitative project, consisted of five case studies of women with high perfectionism scores. The projects were approved by the Canterbury University Human Ethics Committee.

#### PROJECT ONE: QUESTIONNAIRES

##### METHOD

Participants were 87 females of European descent. All were enrolled in a first year psychology course. They completed two questionnaires: the Multidimensional Perfectionism Scale (MPS; Frost et al., 1990) and the Beck Depression Inventory (BDI; Beck et al., 1961).<sup>\*</sup> In addition to identifying women with high MPS scores (for invitation to participate in Project Two), Project One investigated the extent of dysfunctional perfectionism and depression among a female student group. In doing so the group in this project were compared to the healthy group in the main study (above),

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\* For full descriptions of the MPS and BDI see Method Chapter above.

which had excluded participants on the basis of an eating disorder, a history of an eating disorder, or a likelihood of such. Thus the project aimed to assess the likely distribution of perfectionism scores in a general population sample where no exclusion criteria apply.

## RESULTS AND DISCUSSION

Table 41 presents mean values for MPS and BDI scores of the Project One group and the healthy and diabetes groups of the main study (above). Standard deviations and ranges of the Project One group are also presented.

Table 41. MPS and BDI means for Project One group compared to healthy and diabetes group means of the main study (above).

Variable	Project One Group			Main Study Groups	
	Mean	SD	Range	Healthy	Diabetes
MPS Total	77.7	18.9	35-120	62.2	69.8
Concern over Mistakes	21.9	7.1	9-39	17.4	20.2
Personal Standards	22.5	5.6	8-35	19.1	21.5
Parental Expectations	13.6	4.3	6-25	10.1	11.2
Parental Criticism	8.9	3.7	4-19	6.2	7.5
Doubts about Actions	10.8	2.9	4-18	9.4	9.5
Organization	21.5	4.8	11-30	23.6	23.9
BDI	8.6	8.0	0-50	4.8	7.5

Standard deviations and ranges are presented for the Project One group. See Tables 11 and 12 for standard deviations and ranges of the healthy and diabetes groups.

Comparing the means of the Project One group with those of the main study healthy and diabetes groups (Table 41), it can be seen that all mean scores of the Project One group, except for Organization,\* were more similar to the diabetes group means than the healthy group means. Considering that the women in Project One, unlike the healthy women in the main

\* As Organization is the only dimension of the MPS that is not associated with negative self-concept and other unhealthy characteristics, it is not a component of the MPS Total (Frost et al., 1991- see Chapter Five of main study, above).



study, were not excluded on the basis of an eating disorder, a history of an eating disorder, or a likelihood of such, the findings in Table 41 may to some extent reflect that some women in Project One are likely to suffer from, or have a history of, an eating disorder. Research has found that women with eating disorders, or a history of eating disorders, score significantly higher than healthy women on the MPS (Bastiani et al., 1995; Srinivasagam et al., 1995; main study, above) and the BDI (Steiner, 1990; Strauss & Ryan, 1988; main study, above).

The high BDI mean of the Project One group was skewed by one woman scoring 50, the next highest score being 30, with seven of the 87 women scoring above 19 (i.e., moderate-severe or severe depression). The median score was 7. With the outlier (50) removed the BDI mean of the Project One group was 8.1. The BDI findings for the Project One group are similar to those found in a New Zealand community sample ( $M = 8$ ;  $SD = 7.6$ ; range 1-41) (Blampied & Smart, 1992).

For the MPS Total (Project One), 11% of women ( $N = 10$ ) scored in the very high perfectionism category (i.e., above 99; see Figure 6, above), indicating a likelihood of dysfunctional perfectionism in these women. Although this was higher than for the healthy group (0%) and the diabetes group (5%), it was considerably lower than for the bulimia nervosa group (59%) and the anorexia nervosa group (84%) (see main study, above). Considering the five highest scoring women on the MPS Total (in Project One; range = 110-120), none had a depression score above 19 (i.e., mild-moderate depression).

## PROJECT TWO: CASE STUDIES

### PURPOSE

On the basis of clinical insight, considerable theorizing exists about the nature and development of perfectionism (e.g., Hamachek, 1978; Hollender, 1965; Missildine, 1963). The main purpose of this project was to

qualitatively investigate whether the perceptions of women with dysfunctional perfectionism (as assessed on the MPS) reflect some of the claims of such theorists. Another purpose was to investigate whether similarities exist between characteristics of women with dysfunctional perfectionism (in this project) and characteristics of women with eating disorders (e.g., Bruch, 1973; Minuchin et al., 1978; Root et al., 1986).

## METHOD

The five highest scoring respondents on the MPS, regardless of BDI scores, were invited to participate individually in an interview of approximately one hour duration. Each woman was offered twenty dollars reimbursement for her time. All five women agreed to participate in the project. Each interview session, conducted on a one-to-one basis in a private room setting, was audio taped and transcribed for further analysis.

The case study questions (presented below) were based on broad thematic issues about perfectionism. The aim of the questions was to explore views, feelings, and experiences in relation to perfectionism. In doing so the questions assessed the impact of perfectionism on the women's lives, family issues in the development of perfectionism, approval seeking behaviour, and eating pathology. Most questions were relatively unstructured allowing for extension of a response where appropriate. The items about eating pathology essentially explored the qualitative aspects of ideation and practice. If responses to eating pathology questions indicated that there may be a history of, or current, eating pathology the participant was invited to complete the Eating Disorder Inventory-2 Scales (EDI-SC; Garner, 1991).

## CASE STUDY INTERVIEW GUIDE

### Opening Rationale

*As you scored highly on the questionnaire which measures perfectionism I would like to explore your ideas about perfectionism more extensively.*

## **(A) The Impact of Perfectionism on the Perfectionist's Life**

### **1. Awareness of Perfectionism Throughout Life**

*As far as you are aware have you always tended towards being perfectionistic or has such behaviour increased over time?*

*If perfectionism has increased over time:*

*Explain how you believe the perfectionism has developed for you.*

### **2. Specificity of Perfectionism**

*Do you consider perfectionistic behaviour to typify one or two areas of your life or is such behaviour spread over most areas of your life?*

*(e.g. cleanliness, table manners, academic, work, sport, body image)*

*If (a) perfectionistic is in one or two areas only:*

*In which areas of your life do you consider perfectionism is not important enough to bother about? Why?*

*or (b) perfectionistic in most areas:*

*Why do you think that you behave this way? Is there anything you feel all right not being perfectionistic about? Explain this:*

### **3. Self-Efficacy**

*In those areas of your life where you consider perfectionism important do you usually expect to succeed at being perfect? Why do you think this? How do you feel about this?*

### **4. Social Impact of Perfectionism**

*Do you sometimes become irritated by other people's lack of care, work, or achievement? Explain. How has this affected your relationship with those concerned?*

*Has a potential relationship between yourself and someone else failed because you couldn't stand their lack of care, work, or achievement? Explain. Has a potential relationship between yourself and someone else failed because the person couldn't stand your tendency towards perfectionism? Explain.*

### **5. MPS Concern over Mistakes, Doubts about Actions, and Personal Standards**

*Discuss items very highly scored if not yet explained.*

## **(B) Family Issues in the Development of Perfectionism**

*Now I'd like to know more about your family.*

### **1. General Family Environment**

*Tell me about your family during your childhood (brothers/sisters, parents, important changes in your family during your childhood e.g. divorce etc.)*

*What experiences in your family did you value/appreciate? Why?*

*What experiences in your family were harmful/hurtful to you? Why?*

## 2. Parental Bond

*How would you describe your childhood relationship with your mother?*

*loving - unloving*

*caring - uncaring*

*patient - impatient*

*strict - lenient*

*secure - insecure*      *Give examples. How has this affected you?*

*Was your childhood relationship with your father considerably different to that with your mother? If so, in what way? How has this affected you?*

## 3. Reinforcement Contingencies

*During your childhood how did your mother communicate expectations about the way you should behave?*

*How did she react when you met her expectations? (e.g. praise, indifference)*

*How did she react when you didn't meet her expectations?*

*How did you feel about this? How did this affect your thoughts and behaviour?*

*Was your mother difficult to please? Why?*

*(e.g. Did you feel that the more you achieved the more you were loved and the less you achieved the less you were loved?)*

*Were your brother(s)/sister(s) generally treated similarly or differently to you by your mother? (i.e. lenience, praise, punishment, criticism etc.)*

*If differently: Why do you think this? How did this affect you?*

*(compare with father)*

## 4. MPS Parental Expectations and Parental Criticism

*Discuss items very highly scored if not yet explained.*

### (C) Approval Seeking Behaviour

*As a child would you describe yourself as obedient/disobedient? Why?*

*During your childhood how important was it to you that you pleased other people? Why?*

*As an adult how important is it to you that you please other people? Why?*

*If you do something really well how important is it to you that others recognize what you have achieved? Why? Give an example.*

*How would you feel if other people didn't care about your achievements? Why?*

### (D) Eating Pathology

*Describe the food you would typically eat in a normal day? (nutrition)*

*Have you ever dieted in order to lose weight?*

*Are you generally content with your physical appearance? If not: Why not?*

*Do you have any serious concerns about your body shape?*

If 'yes': (a) *Have you ever had a period of time that you did not menstruate for three months or more (excluding pregnancy)?*

(b) *Have you ever had an episode of eating an amount of food that others would regard as unusually large?*

If 'yes': *Have you binge eaten on a regular basis?*

If 'yes' to a or b: *Please complete the EDI-SC (Garner, 1991).*

*Thank you for taking the time to be involved in this study.*

## RESULTS

The major responses and themes of each woman's interview are outlined below. It is important to note that these findings reflect the informants' claims rather than objective knowledge. Pseudonyms replace real names. MPS Total and BDI scores from Project One are presented for each case.

### 1. Sharon

(MPS Total score: 120; BDI score: 12 - mild depression)

Sharon, a 48 year old divorced mother of two, and second year university student, perceived herself as a perfectionist, particularly academically. However, Sharon did not expect to succeed at being perfect. She claimed to be motivated by "a fear of failure ... an irrational fear [adding] I don't know how to overcome it." This fear had influenced some important decisions for Sharon. For example, during her adolescence, although an able student, rather than sit School Certificate, and risk failure, she went to work in an office.

As a student Sharon perceived herself as getting "very uptight about assignments" with a "compulsion ... to read everything ... in case I miss something." Perfectionism was also expressed by Sharon in her attitude to her assignment results. She claimed: "I'm never entirely happy with things that I do, even if I get and A+, I look at it and think I could have done better with this and this, so why did I get an A+?"

Although Sharon did not perceive herself as overly irritated by other people's lack of perfection she felt that her daughter becomes annoyed with her perfectionistic behaviour. Yet Sharon believed that she must do things right to be accepted by others, to avoid being a failure. She referred to her past marriage as "a failed marriage" - a further reflection of Sharon's highly self-critical attitude.

As a child Sharon was second of four children. Although her parents remained together Sharon tearfully disclosed that when she was 18 years of age her father announced that he had a previous marriage and two older children. Sharon said "that was a real shock to us." Sharon was visibly distressed throughout the remainder of the interview, particularly when referring to her relationship with her father. A typical comment about him was: "He's not one to say it or show it a great deal but I know that he does love me." Such comments reflected claims by Sharon that she felt very insecure in her relationship with her father, deprived of attention and time, frequently verbally "put down" by him, and sometimes afraid of him.

Sharon also perceived an insecure childhood relationship with her mother, although recalling her mother as being a little more patient, caring, and lenient than her father. Sharon recalled a volatile relationship between her parents and described growing up in a strict household with a "children are seen and not heard type of atmosphere" with a positive family image being portrayed publicly. According to Sharon her parents "argued constantly, but were very demonstrative in their affection for each other." Consequently Sharon recalled being the peacemaker, "trying to make peace between them", trying to "defuse the situation", being "a very quiet person", and "always wanting to be good". Sharon's outline of her role in the family was indicative a hypervigilant, obedient child (particularly toward her father), constantly watchful for signs of parental conflict.

Sharon described a childhood environment devoid of positive reinforcement from either parent. She recalls being frequently verbally and physically punished by her parents, but never praised, no matter how hard she tried. Sharon claimed, "I think they both were and are critical people and I think I've bent over backwards the other way."

Despite Sharon's acknowledged insecure relationships with her parents, she perceived her younger brother and sister as being raised in a less strict and more caring family environment than her older sister and herself, and claimed that "sometimes it seemed unfair." Sharon's body language at that point in the interview indicated that the situation had had a profound negative impact on her. For example, she explained: "My brother's doing a Polytec course in Wellington at the moment and my father often says proudly about how well he's doing." Sharon then sobbed: "He wasn't interested in my achievements." However, Sharon claimed that in later years her mother (now deceased) began to recognize her as "doing OK."

Sharon claimed that it is particularly important to her to please other people and for them to recognize her achievements. She continues to strive for positive recognition from her father, claiming that this is an important issue for her to resolve. However, Sharon described her father's expectations of her as too high. Still visibly upset, she stated: "I think that I'm doing relatively well at university, but I still don't get acknowledgement for that from my father even now." She admitted, sobbing again, that much of her perfectionistic behaviour is likely be directed towards seeking her father's approval and recognition. Sharon continued, sobbing, "I've realised how upset I get when he goes on about my brother." Sharon also perceived her older sister as being admired by her father, her younger sister as the baby, and herself as "just the one in the middle."

With regard to eating pathology, Sharon had never purposely dieted to lose weight. However, following the breakdown of her marriage her appetite

diminished to the extent that amenorrhea occurred for several months. Normal menstruation has since been restored and Sharon has a current BMI of 18, which she does not wish to increase - consistent with a very slim body ideal.

## 2. Donna

(MPS Total score: 115; BDI score: 14 - mild depression)

Donna, a 31 year old married mother of three, professed: "I'm a perfectionist. I like everything to be just spot on, and I like everything to have a reason, and everything has to be very, very point blank.... I've always been like that." Donna's perfectionism pervades most areas of her life. She sees no room for mistakes, from the way her toilet roll faces to gaining an A-university grade: "I really thought it was A+ material.... I was very, very upset, very disappointed." Donna described the impact of her perfectionism as "very tiring. I'd love to be able to just sit back and not do it. That just doesn't seem to be in my make up."

Donna's husband and children sometimes become irritated with her perfectionism as she does with their lack of perfection. For example, Donna claimed: "For me he [her husband] is often not perfect enough. I have my standards for him." If Donna's daughter folds the washing, Donna will refold it all. Consequently, her family feel discouraged from helping her.

Donna can also become irritated by her own untidiness. She claimed: "Something like the washing I'll put a towel in the cupboard and I'll think it's not folded right and I'll say to myself, you know you're going to go back and fold that towel right, and I walk away then I actually go back and I refold that towel and I know I'm going to do that, but I do test myself occasionally."

Donna's perfectionism had exhausted her and her excessive self expectations had caused exam difficulties in courses where she was an A grade student. She explained: "I walked into my first exam and just totally lost it and my



hands sweated and my eyes crossed. I couldn't breathe.... I've been like that with all of them." Consequently Donna had commenced counselling to learn "how to sit back and relax and let people help."

Donna perceived her perfectionism as having developed during her childhood. As the second youngest child of seven (youngest female), and with both parents working full-time, she took on many of the domestic duties, and was very particular about them. Donna perceived her mother as a very passive, loving, caring, patient, hard-working and timid woman whom she pitied and protected. On the other hand Donna perceived her father as a very violent, impatient and domineering man in a very volatile household. "He belted us with horse whips or whatever he could lay his hands on.... He likes to be the boss, of everything and everybody and we do it his way or no way.... I've seen him take an axe to my brothers."

Despite a fear of their father, which alienated Donna's siblings from him, he was sometimes loving, especially towards Donna who became "daddy's little girl." She claimed: "He just idolised me.... Sometimes I snuggled up on his knee and went to sleep.... I had that little place I could get in the middle of the outbursts." Although never praised, Donna perceived herself as a very obedient child whose life "totally revolved around" meeting her father's demands "to keep him calm ... to protect my mother [and] ... so I didn't get beaten." Plagued by a constant fear of, not only her father leaving home, but also her mother, Donna was "very desperate" for her father's love and calmness. She claimed: "He hated us, because we were bad. Even my mother's mother didn't want us. She was happy to take my mother home but she didn't want the children. We were the spoilers."

There were no experiences in Donna's childhood which she recalled as positive. She claimed to have blocked out all memories of her first nine years as they were "just too difficult to bear." Her father frequently threatened to leave home but Donna would ask him to stay. Donna's

relationship with her father was very insecure. She explained: "I had to keep him tied around my little finger I suppose to make sure he stayed where he was .... My father used to click his fingers actually. He never spoke. He went (click sound). And that was it. You jumped. You got a cup of tea or whatever and you knew. You didn't get told what he wanted. You knew what he wanted and we grew up knowing what he wanted. He never physically said, 'Would you get me a cup of tea?' or 'Get me a cushion for under my feet?' We knew what that click meant, so it was just continual making sure that we were there and keeping him happy so that he didn't explode." Such behaviour occurred about 12 times each hour. Consequently the children called him "God."

Donna perceived her father as being very cruel to her mother (now an invalid) such as "an argument and the wedding photo got smashed and glass would come out and slice through my mother's face." Despite Donna's father's cruelty she described him as "a street angel and a house devil" - a non drinker who presented a 'happy family' public image - "the pillar of the church.... Butter would melt in his mouth."

Mealtimes were often volatile during Donna's childhood. She explained: "Your evening meal if someone didn't like it you know the whole table would be up and be on the floor and that was just normal .... or if somebody was eating dinner and they finished dinner and you know they were still a bit hungry, well his meal, he would sit there and make you eat his meal and be a martyr. 'I'm not eating it because you're still hungry.' So no one was ever game to say they were still hungry. [If you didn't eat the meal] you just sat there till four o'clock in the morning, or until you vomited on the plate.... I don't remember how old I was, probably five or six and told him I didn't like beans (which I still don't like) and he sat and made me eat them till three o'clock in the morning and I vomited all over the place and he

made me clean it up." Vomiting was also Donna's reaction to other unbearable events such as seeing her father beat her mother.

"Looking for an out," Donna left home at 14 or 15 years of age and married two years later. She now uses her learned perfectionism to seek approval from others, especially her husband, more than her father. She explained: "Funnily enough I'm just like that with my husband and he's probably the one in my life that expects the least of me. He's extremely happy with the way I am, but I'm very hard on him of my expectation of what I should be for him.... I give my husband hell." Donna claimed to be desperate for her husband's love and approval. She explained that without her husband "I've told him many a time, my life would be empty, totally. If he ever dies on me God forbid. If he ever dies on me I don't know what I'll do."

Regarding eating behaviour, Donna demands normal eating patterns of her children, although, unbeknown to her family, she rarely eats before 6 p.m. each day. She claimed: "I very rarely eat. I don't eat breakfast. It's very rare to eat lunch. I eat an evening meal, a very large evening meal usually." Donna has no serious concerns about her weight, has never dieted to lose weight, (BMI = 19) but has difficulty gaining weight. She claimed: "I was probably a size 8 until my first daughter was born basically. I was extremely ill with her." Donna has a "mental block" which repels her from eating many foods. She explained: "I don't physically vomit but there is a lot of food I won't eat" (e.g., bread, tomatoes, beans, cereals). Although unsure how this developed Donna recalled being forced to finish the food on her plate as a child until she vomited, adding, "that was quite normal."

### 3. Fiona (MPS Total score: 114; BDI score: 11 - mild depression)

Fiona, a single 20 year old, considered herself to have always been extremely perfectionistic in all areas of her life. She explained: "Everything has to be sort of spot on.... It drives me insane." However, plagued by a constant fear

of not being good enough, Fiona does not always expect to succeed at being perfect. She claimed: "Sometimes it can effect when I'm actually doing something because I'm so concerned about if I do very well in it and I don't do very well in it just because I'm worried about it really." She reported that, due to excessive anxiety and self-criticism, she gets behind in her studies, and works long hours with excessive rewriting. Her boyfriend resented her excessive focus on work but Fiona did not perceive herself as irritated by other people's lack of perfection.

Fiona perceived her perfectionism as having developed during her childhood from extremely high paternal expectations. She claimed: "It was always sorta really important in our family that if you were gonna do something you give it your best or you don't do it at all really. You don't sorta go into anything half baked....There was always really high expectations on all the kids to aim high and to do well so it sorta comes from that really."

Fiona described her family as being two parents and two younger brothers, one with cerebral palsy, the other a "child genius." Fiona could not recall any positive childhood experiences. She expressed anger and resentment that her parents worked long hours while the children spent most of their time with their grandmother and alcoholic grandfather. Fiona recalled regularly siding with her grandmother in conflict against her grandfather.

Fiona perceived insecure childhood relationships with both of her parents. As her mother worked from dawn 'til dusk, Fiona complained: "I was annoyed because she wasn't there." Believing her brothers to receive more maternal attention and praise than herself she became a "loud" child. Fiona described her father as uncaring, impatient, strict, highly critical, difficult to please, and 'never' there, adding, "I was probably loved but I didn't feel it." She was very afraid of her father's disapproval. Desperately seeking his approval Fiona became a "straight A student." She explained:

"We got more attention from him if our marks were better. It was really the only way to actually get some attention, to actually get some acknowledgement so that's why." Fiona's "child genius" brother received considerably more acknowledgement than her; she resented him for that.

Fiona's father selected her school courses on a path to medicine or law. Regarding year 13 bursary she disclosed: "I flunked my exams.... I completely panicked... I put a lot of work into it. I managed to get some aegrotats but all my exams I completely fluffed. I think it was just too much pressure." Rather than disclose her bursary failure to her father, Fiona left home and sought employment.

Fiona feels that she has failed her father. Although he inquires regularly about her university grades he disapproves of her course choices and lack of definite career objective. This upsets Fiona. She remains a perfectionist, seeks approval from other people, including her parents, but claimed to be less desperate for her father's approval than as a child. She explained: "I can't live up to what he expects from me."

Although eating pathology was not evident for Fiona, she claimed of her body image to be "never happy with anything.... I can get upset about it sometimes." As a child Fiona used to get very upset about her body image. She was frequently teased by her peers about wearing braces and being skinny. Fiona now has a very self-critical body image and a perception of thin female bodies as unattractive. Although not overweight, Fiona is very sensitive about her body size and consciously ensures that she does not develop a thin body.

#### 4. Jody

(MPS Total score: 114; BDI score: 4 - normal)

Jody, a 19 year old, lives with her parents and only sibling (older sister). Jody perceived that her perfectionism, which pervades all areas of her life,

developed over time from high parental expectations. Parental disapproval of her sister's lack of achievement motivated Jody to succeed. Resulting parental approval maintained a pattern of increasingly higher achievement combined with increasingly higher parental expectations. Jody explained: "They expect more of us than themselves because they don't want their children to end up like they did, very mediocre."

Jody said that her father "brags" about her achievements. She is studying medicine intermediate (her father's decision) but would prefer a career in science. Jody, fearful that she won't meet her parent's expectations of entry to medical school, said that if she fails "they will be shattered." Jody had become perturbed about her parents' high expectations of her, which she was struggling to live up to. She explained: "They praise me and stuff but they come to expect it of me and medium best isn't good enough whatever I do. Take my drivers licence. I failed it the first time. They were like totally shocked and I'm like I'm not too worried. Lots of people fail but they were just shattered and I thought that's not very fair - just little things."

Jody's parents have frequently compared her behaviour with that of her sister, thus alienating her from her sister. Jody said of her sister, studying part-time: "They don't expect much out of her. When she doesn't do well they say 'Oh, typical Mary.' That really bugs her and then they praise me and not her and she gets angry.... She gets upset about it but I know it's not my fault. She bugs me how she always goes on about it."

Although Jody could not recall any positive experiences in her childhood, "quite horrible" experiences were readily recalled. She described her father as a short-tempered, very selfish, very impatient, and sometimes scary, man, who would never allow his wife or children to question his judgement. "He does expect things to be just his way and if things don't go his way, anything, different from his set daily routine, or if something out of the ordinary happens, he'll go spastic." This routine includes Jody's mum (who

works full-time) setting his breakfast on the table before he awakens. Jody perceived her mother as a patient and caring woman. Regarding the high paternal expectations of Jody, she claimed: "My mum wouldn't disagree. She wouldn't dare disagree ... 'cos my dad would just go off the handle at her."

Jody's father, but not mother, models perfectionism about care of material possessions (e.g., car almost too clean to touch). Jody, but not her sister, imitates this behaviour. Jody cited an example: "This is going to sound stupid too. I have this spare bed with a duvet on it and if anyone sits on it even if it's at the end or something I go mental at them." Also like her father, Jody sometimes becomes irritated by people who achieve below their ability level.

As a child Jody was extremely obedient "because I really wanted my parent's approval. [It was] very, very important." However, her father's approval became increasingly difficult to achieve. Jody explained: "If, for example, I got almost everything right in an exam, he'd expect me to get it all right next time." Approval from other adults is also very important to Jody. She said: "I don't like people to be angry at me or think bad things about me. I just want to please everyone."

At 14 years of age (two years after regular menstruation commenced) an urge to impress other people motivated Jody to participate in a strict weight loss diet, not eating all day. Jody claimed: "I wanted to be better than the skinny girls." Her weight fell to 33 kg (BMI = 14). Jody ceased menstruating for nine months, yet perceived herself as fat. As Jody's mother became very worried about her emaciated appearance she urged Jody to accompany her to a general practitioner. Jody was very angry with her mother and did not want to go, but eventually obeyed. Jody was put on a special diet of 'treat' foods combined with persuasion and rewards for eating. Although her mother and friends monitored her eating, Jody would try to sneak food down the sink. This caused considerable conflict with her parents.

However, Jody slowly regained weight. Although it seems likely that Jody suffered from anorexia nervosa, she was not informed of her medical diagnosis.

Although Jody's 'current' BMI is 18 she claimed: "I don't eat very good at all.... I don't eat breakfast. It makes me feel sick.... Most of my diet is chips which is really bad but." Jody will eat meat and potatoes but never other vegetables. Her main drink is "definitely diet coke." Administration of the EDI-SC indicated that twice a month Jody participates in bingeing behaviour rarely able to control each binge and feeling distressed by it, although not purging. She claimed: "Sometimes I just eat and eat and can't stop."

### 5. Lorna

(MPS Total score: 110; BDI score: 19 - mild-moderate depression)

Lorna, a recently married 23 year old, first-year university student, did not really perceive herself as a perfectionist. However, she claimed to strive hard to achieve in most areas of her life, being "a real perfectionist around the house. Things have to be perfect" (e.g., spotless cleanliness, crooked items perfectly straightened, including books, towels, and shoes in her husband's wardrobe). Lorna added: "My husband tells me I'm nuts really."

Regarding her studies Lorna claimed: "When I get work back I really kick myself when something is not right about it, if there's been a spelling error, so I prefer that I'm rushed to hand something in and have it perfect than have failures filter through errors.... Just the other week I got an essay in. The deadline was 5 o'clock and I arrived at 2 minutes past 5 and I had to rush after the woman who was collecting them because I was correcting silly things, rearranging. It wasn't even grammar or commas or anything important like that. It was just the outline and the font, to make it look pretty." Lorna tends to receive A grades for assignments but not exams.



Lorna described herself as very approval seeking. "I do feel like I need to please people. I would rather stress myself out and give them something than say 'No.'" However, Lorna becomes irritated by other people's underachievements. She explained: "People who underachieve and it's their own fault annoy me.... To achieve you have to set high standards and if you don't achieve those standards you're likely to end up a second rate person. I've been at that point - worked in offices and been a nobody, just a number and to me that's a second rate person because I didn't achieve at school I ended up being a nobody, a nothing." Lorna's father, a wealthy businessman, places a very high value on education. She claimed: "Dad's favourite saying was that you'll end up scooping ice creams in a dairy. That's how he sees a lack of education but ironically he has none himself."

Lorna is the middle child of five, one being male. She claimed of her parents: "Things have always been a bit funny with them. I had a half sister pop up when I was about 16.... That was my father's before he was married. None of us knew about that, so." Although Lorna perceived both of her parents as very critical with high expectations of her, she described her mother as a loving, caring, patient, and well educated, but too thin (size 8), often dieting, and superficial about physical appearances. "When I was younger, you know, chubby child, and mum would be encouraging me at 10 or 11 to go on a diet and things like that which I don't really think is that appropriate. She was always concerned when I was a teenager about what I was wearing and about what other people would think.... She's still like that quite a lot. She'd be the first to point out if you've put on weight but she'd be the last to praise you if you lost it. It's kinda funny there. She praises achievement academic-wise but she doesn't really praise much else." Lorna also perceived her mother as "easily dominated.... She was strict to back up my father but she was lenient on her own terms.... The decisions were made by him so she felt she had to make a decision that was going to suit him because if she didn't he would override it anyway."

In describing her father as unloving, uncaring, and extremely impatient, Lorna explained: "My father is the most dominant person I've ever met.... Everybody who meets him says it. He's extraordinary..... My brother is 25 and had a number two haircut before and it looks good on him and then my father walked in and said 'You're not getting a haircut like that' and so my brother said 'OK dad.' He's 25 years old and my father tells him what haircut to get." At mealtimes Lorna's father "dominates conversations.... He belittles dinner. He'll say to mum 'What's this crap? It's tough as old boots' and 'Ooh what's this?' and 'Yuck where's the meat?'... and he never says 'Thank you.' And he puts his hand down the front of his trousers and chucks his plate to the side and she waits on him. He's a pig really."

As a child Lorna and her siblings were monitored daily by their father "quite army like" for clean teeth, toes and ears, tidy beds etc. "Things had to be perfect." Lorna also recalled often being "picked on.... All my siblings like my mother used to blame me for everything that went wrong when I wasn't even in the room. I used to cop the punishment 10 times more often than the others but I don't think I was a bad child. A lot of it has been dealt with since and mum has admitted that I got a raw deal." Although this is resolved with her mother Lorna retains considerable ill feeling towards her father, whom she and her siblings were afraid of. Lorna recalled incidences at about 8 to 10 years of age such as her father dragging her by the hair to wash the dishes when it was her brother's turn, because her brother let her take the blame, and her father putting pig scraps in her bed when she forgot to feed the pigs. Lorna was often strapped by her father. "I remember a lot I couldn't go swimming at school because of bruising on my legs and things." Lorna believes that her siblings were rarely punished for their demeanours. "They used to weasel out of it. I was the scapegoat.... My grandmother has said to me that she saw it [and] that I'm not imagining it. It was like that."

Lorna believed that her father's expectations of her have been greater than of her siblings. She explained: "I think his expectations were in relation to ability, so his expectations for me were higher because I was more able. My sister was not successful in real terms, but she is in his eyes." Although she tried, Lorna had difficulty meeting her father's expectations of her, and eventually rebelled. At the age of 16, while still in school, Lorna was expelled from the family home she said "because dad was a perfectionist. He was really tough. I couldn't please him. Everything I did was wrong. That was probably the major thing in my childhood.... The rest of my family were very weak kneed including my mum. I was the one with a bit of backbone."

Lorna chose as a husband a patient, easy going, factory worker - "opposite to [her] father." She claimed: "I've purposely gone out of my way because I know that there are some likenesses between my father and me. I try and tone down my behaviour. I try not to be as judgmental and dominant as he is."

In describing her childhood relationship with her father as deprived of approval and very insecure Lorna claimed: "He was very fickle. He still is, so I still feel quite insecure about where I stand with him." Lorna entered university to prove something to her father. She claimed: "I want to compete and I know I'm never going to be able to compete for his affections or compete money-wise but I know that I can compete brain-wise." She telephones her parents whenever she receives an A grade. Of not being able to meet her parents' expectations Lorna disclosed that it upsets her "that perhaps I still won't. Even if I do get educated and go into something that's satisfying for me I think because I'll never be rich in what I want to do I probably won't meet my father's expectations because he still says to me things like 'You'll be fine. You'll be able to get into psychology and make hundreds of thousands of dollars a year.'... So I think that by the time I'm thirty he'll be disappointed. He'll think that I'm not good enough."

Regarding body image, Lorna perceived her mother's very thin body ideal as too thin and her wedding photos as showing signs of verging on anorexia. "My sister and I often tell her you were too skinny and she says she had a lovely figure and that she wasn't skinny. She was perfect. But we see the wedding photos and you see the collar bones jutting out and elbows and everything." Lorna perceives her mother's requests for her to diet as unreasonable and excessive. Lorna seeks her mother's approval of her body size, but does not receive it. Lorna explained: "Last time she said something to me I would have been about a stone and a half more than I am now [current BMI = 26] but that's something I got under control and still am but since I've lost that weight I say 'Look mum. Look at my jeans, all baggy' and she didn't really, she said 'Ooh.' She's quite funny like that."

Although Lorna tends to eat healthy foods she sometimes eats excessively. She would like to be slimmer and sometimes diets to lose weight, but this is followed by binge eating, with diet pills to counteract this. Administration of the EDI-SC indicated that although Lorna has not binged or purged in recent months she exercises for five hours a week mostly to control her weight. Lorna began dieting and bingeing at 11 years of age. She felt unable to control her urges to binge or to prevent a binge, and sometimes became distressed by this.

## DISCUSSION

Although the path to dysfunctional perfectionism was different for each woman some common themes were apparent.

### Perfectionism Generally

#### Excessiveness of Behaviour

All five women informants were aware that their perfectionistic behaviour was excessive (although Lorna did not label herself as a perfectionist). Some perfectionistic behaviour tended towards obsessive compulsiveness, thus

draining time and energy for no major effect, such as Donna's refolding of towels in her cupboard or Fiona's excessive rewriting of assignment drafts. However, such behaviour is arguably perfectionistic rather than compulsive in that it is more goal-directed than ritualistic (Hollender, 1965).

### Specificity of Perfectionism

Consistent with theories about the specificity of perfectionism (Hollender, 1965; Missildine, 1963) the perfectionism of all informants tended to be typical in the areas of high parental expectations during their childhood. In all cases this included academic effort and achievement. For those women with excessive domestic expectations of them as children, perfectionism was also typical in the domestic area (Donna, Jody, Lorna), although developed differently in each case. Donna's domestic perfectionism was both positively and (even more notably) negatively reinforced as a child, in attending to her father's wants, in that she gained affection and suppressed his outbursts. For Jody, domestic perfectionism was learned through observation and imitation of her father modelling such behaviour. Lorna's domestic perfectionism was negatively reinforced as a child through her father's "army like" monitoring of such behaviours.

### Self-evaluation

All five women had frequently achieved at least A grades in university assignments but tended to be very self-critical and suffer from high performance anxiety particularly for exams. Such negative cognitions have been claimed to typify perfectionists and sometimes inhibit performance (Hollender, 1965; Missildine, 1963). This is likely to be associated with Sharon leaving school due to a fear of School Certificate failure, Donna blanking out in exams, Fiona's Bursary failure, Jody's drivers licence failure, and Lorna's low exam grades. Such anxieties may be a realistic response, given the high standards that these women imposed on themselves.

### Social Impact

Despite all of the women reporting that others become irritated with their perfectionism they persisted with such behaviour. It seems reasonable to speculate that this paradox of the behaviour persisting despite the negative consequences may be, in part, attributable to the positive reinforcement such women received for their perfectionistic behaviour outweighing positive punishment, such as irritation and anger expressed about such behaviour. Indeed, all informants perceived a need to be perfect to be accepted by others, although not all such women imposed their perfectionistic expectations on others. This leads to the question of the extent to which the qualitative information gained confirmed the idea that high levels perfectionism disable women. Theories about the interpersonal/intimate relationships of dysfunctional perfectionists claim that they fear rejection if they are judged as less than perfect (e.g., Burns, 1980). A parallel can be drawn here with the impact of being highly anxious interfering with adaptive functioning. Studies of anxiety have found that the behaviour tends to be maintained because of short-term avoidance consequences despite long term adverse consequences (e.g., Schwalberg et al., 1992).

### Childhood Environment

Each informant grew up in a conflictual family environment. Except for Lorna valuing her rural upbringing, no positive childhood experiences could be recalled by these women, with one woman (Donna) claiming to have blocked out all early childhood memories as they were too harsh. Observational and empirical studies have reported high conflict levels to typify families of women with bulimia nervosa (Bulik et al., 1989; Root et al., 1986).

Low parental care has been widely cited in empirical studies of women with eating disorders (Calam et al., 1990; Kendler et al., 1991; Pole et al., 1988; Rhodes & Kroger, 1992). All informants in the current project shared

perceptions of their fathers as very uncaring, impatient, strict, critical, and controlling, with excessively high expectations of them. Excessively high parental expectations are theorized as an aetiological factor in the development of unhealthy perfectionism (Hollender, 1965; Missildine, 1965).

Considerable deprivation of paternal time, affection, and approval was another common theme among informants. All five women perceived communication difficulties with their fathers, particularly as they would not allow their perspectives or authority to be undermined. All informants were afraid of their fathers and felt very insecure in their relationships with them, whereas only two informants perceived insecure relationships with their mothers (Sharon, Fiona). Similarly to the women in this project, it is claimed that women with bulimia tend to have "intensely ambivalent relationships with their fathers ...[who expect] high standards of intellectual and professional achievement" (Gordon, 1990, p. 61). Women with anorexia nervosa have been found to have rigid and controlling fathers with high expectations of them (Kalucy et al., 1977; Minuchin et al., 1978).

Another theme common to the informants' fathers was that they placed a high value on education for their offspring although not highly educated themselves. This is consistent with theories about self-esteem for some parents being contingent on their child's success, often to counter the parents' lack of success (Barrow & Moore, 1983; Burns, 1980). Such a parenting style has been observed to typify families of women with eating disorders (Bruch, 1973; Sours, 1974; Vath, 1982).

In an environment of high parental expectations of offspring being associated with parental self-esteem, a public image of family solidarity is predictable. Indeed all five informants reported that despite their conflictual family environments, their parents presented a positive public family image. For example, Jody's father "brags" about her medicine intermediate

achievement. Donna's dad is "a street angel and a house devil ... the pillar of the church." This is consistent with findings of studies of families of women with eating disorders that such families mask their relationship difficulties with a facade of well being (Bruch, 1978; Minuchin et al., 1978; Sargent et al., 1985). The family facade of well being may in part explain why, despite the dysfunctional aspects of these family environments, the marriages remained intact.

In contrast to their perceptions of their fathers, all informants reported their mothers to be more patient and caring. Three informants perceived their mothers as obedient, submissive wives who wouldn't dare contradict their domineering husbands (Donna, Jody, Lorna). This is consistent with Root et al.'s (1986) claim that one parent (usually the father) in "Perfect Families" tends to be authoritative and controlling. Some informants perceived their mothers as, like their fathers, overly critical of them (Sharon, Fiona, Lorna).

Regarding reinforcement contingencies during their childhoods, some women received no paternal praise (Sharon, Donna, Lorna). For those who did receive praise, it was perceived as insufficient, whether it be from their father or mother. All forms of parental approval were perceived as insufficient by all five women. Sharon recalled receiving no parental approval. For Fiona and Jody, parental approval was contingent on increasingly outstanding academic success. The notion of parental approval being contingent on successively higher performance is theorized to contribute to the development of dysfunctional perfectionism, as is an environment of non-approval or inconsistent approval. (Hamachek, 1978; Missildine, 1963). For Donna, paternal approval required waiting on her father constantly. For Linda, paternal approval became unachievable. Physical punishment was a frequent response to not meeting paternal demands for all informants except Fiona, who perceived her parents as "never there."



## Childhood Behaviour

### Obedient, Approval Seeking, High Achieving

All five informants, perceiving parental approval of themselves to be insufficient, struggled throughout their childhoods to attain their parents' approval by meeting perceived excessive parental demands, as is theorized about the development of perfectionism (Hollender, 1965; Missildine, 1963). In doing so, also consistent with theories of the development of perfectionism, all of the informants perceived themselves as high achievers and excessively obedient children (Hollender, 1965; Missildine, 1963). This behaviour was particularly oriented towards their fathers, whom they were afraid of, although Lorna eventually rebelled.

It seems feasible to speculate that, consistent with clinical impressions of women with eating disorders (Bruch, 1985; Minuchin et al., 1978; Root et al., 1986; Vath, 1982), much of the obedient, approval seeking, childhood behaviour of the informants in this project was negatively reinforced by a fear of the potential consequences of their volatile, strict, and unpredictable family environments. Most of these women were likely to have been hypervigilant children monitoring the environment for signs of negative affect, particularly paternal outbursts.

Such overinvolved behaviour is likely to reflect enmeshed family relationships, as Minuchin et al. (1978) and Root et al. (1986) claimed of families of women with eating disorders. Moreover, behaviours such as being the "peacemaker ... always wanting to be good" (Sharon), "daddy's little girl" (Donna) seem indicative of the "good girl" claimed to typify children who later develop anorexia nervosa (Bruch, 1973; Andersen et al., 1985). The high levels of mutual interdependence during childhood between these women and at least one parent was also characteristic of the families of women with anorexia nervosa described in Selvini-Palazzoli and Viaro's (1988) model. For Jody, who probably developed anorexia nervosa at

the age of 14, the high levels of mutual positive reinforcement with her parents for her high achievement fit this model.

### Sibling Rivalry

A theme common to all informants was an awareness of marked differential parental treatment between their siblings and themselves. In all cases this led to sibling rivalry and difficulties with sibling relationships. The way that this presented was different, and yet very overt, in each case. Donna's siblings, unlike herself, received no love from their father. For Jody, high academic achievement was learned as the route to parental approval through high parental criticism of her sibling's poor academic achievement (negative modelling). Other informants resented siblings having received higher parental approval than themselves, such as Sharon's brother at Polytechnic, Fiona's "child genius" brother, Lorna's being the one who was "picked on." This is consistent with findings of differential treatments of siblings of women with eating disorders compared to controls (Sights & Richards, 1984; Wonderlich et al., 1994). Indeed, sibling rivalry has been cited as a risk factor for perfectionism (Hollender, 1965) and for eating disorders (Nygaard, 1990; Sights & Richards, 1984; Stierlin & Weber, 1987).

### Launching

Root et al. (1976) found that women with bulimia tend to have difficulties with launching. Three of the four informants in this project who had left their parents' homes did so during mid-adolescence under adverse circumstances (Donna, Fiona, Lorna). They left behind considerable unresolved issues, particularly with their fathers. Difficulties in father-daughter relationships during adolescence for women with eating disorders have been cited in observational studies (Bruch, 1973; Guidano & Liotti, 1983) and empirical studies (Sights & Richards, 1984; Dolan et al., 1990).

## Adulthood

### Partner Selection

The two married women (Donna, Lorna) purposely selected husbands with different temperaments to their fathers (i.e., not high expectations of them) yet both women tried to be perfectionistic for their husbands despite lack of positive reinforcement for this. Both women wanted to be able to reduce this behaviour. This is consistent with Hollender's (1965) claim that the perfectionism learned in childhood becomes internalized as part of the ego-ideal.

### Approval Seeking

All five informants continued in adulthood to struggle for approval from other people, including peers and mothers, but especially their fathers, except for Donna whose approval seeking was more directed toward her husband. Hence, when high academic grades were attained there was a trend to seek paternal approval for the achievement. Sibling rivalry remained associated with this. Some feared that even academic excellence in the courses they had selected would not be enough to achieve paternal approval (Sharon, Fiona, Lorna). Although Fiona failed to achieve the career her father chose for her, Jody continued to struggle on the career path of her father's choice, fearful of failure, whilst also imitating his modelled perfectionism about material possessions. All informants had considerable unresolved issues with their fathers about acceptance and approval (e.g., insufficient acknowledgement of achievements, differential reinforcement of siblings). This leads to a question, which remains largely unanswered, of why a desperate need for paternal approval exists in these women despite negative and hostile consequences.

### Other-oriented Perfectionism

Some informants had acquired and performed their fathers' modelled traits of high expectations of others, thus being irritated by others people's lack of

perfectionism (Donna, Jody, Lorna), i.e., other-oriented perfectionism (Hewitt & Flett, 1991).

### Eating Pathology

All five informants had current, or a history of, weight related issues and/or eating disturbance, although not necessarily an eating disorder. Fiona differed from the other women in that she was teased as a child for being "skinny" and consequently consciously avoided becoming thin. This indicates how criticism of body size can impact on a woman's eating behaviour, particularly if she has an approval seeking temperament. This seems to demonstrate the inverse of research that indicates teasing of women about being overweight can be a triggering mechanism for a diet (Head & Williamson, 1990; Nygaard, 1990).

For Lorna, criticism of her body size and pressure to diet from her very thin mother (who modelled dieting behaviour), had, consistent with Pike and Rodin's (1991) theory, evoked dieting behaviour. However, consistent with Polivy and Herman (1985, 1987), dieting had lead to bingeing, which in turn provoked purging. Lorna continued unsuccessfully to seek approval from her mother about her body size, through dieting behaviour.

Both Sharon and Donna had difficulty with diminished appetites. Sharon's BMI of 18, which she did not want to increase, seemed a thin ideal for a 48 year old. Sharon's eating difficulties had been in response to extreme stress and had led to a history of amenorrhea. Donna's response to extreme stress was to vomit. Donna claimed to be repelled by many foods and to have difficulty gaining weight, perhaps a reflection of her father sometimes forcing her eat until she vomited. She claimed to rarely eat before 6 p.m. each day.

Jody probably had the most pathological eating history. It seems likely that she had a history of anorexia nervosa and continued to have unhealthy

eating patterns, existing largely on chips and diet coke, and sometimes bingeing.

## CONCLUSION

The themes evident in this study provide considerable insight into the nature and development of dysfunctional perfection and the impact of this on the perfectionist's life. The findings reflect some of the theories about family issues in the development of perfectionism and about childhood family environments of women with eating disorders. The excessiveness of the perfectionism for all women in this study, and the negative consequences of this, such as performance anxiety and perfectionism persisting despite positive punishment, demonstrates the dysfunctional nature of such behaviour.

An important limitation of this study is that, as only five women were interviewed, it is cautioned against generalizing from this to other women with dysfunctional perfectionism. For example, it seems unlikely that all women with dysfunctional perfectionism perceive their fathers as domineering and strict. Maternal, rather than paternal, dominance, or other issues, may be associated with the development of dysfunctional perfectionism. However, the findings of this study have generated some issues that arguably warrant investigation on a broader scale, and thus may provide further insight into factors associated with the development and maintenance of dysfunctional perfectionism.

Reference (additional to references in main study, above).

Blampied, N., & Smart, N. (1992). Bulimia, depression and cognitive distortions in a New Zealand community sample. Paper presented at World Congress of Behaviour Therapy, Gold Coast, Australia.

APPENDIX 2  
INFORMATION LETTERS AND CONSENT FORMS FOR  
PARTICIPANTS IN STUDIES

PERSONALITY CHARACTERISTICS AND FAMILY  
RELATIONSHIPS IN WOMEN WITH EATING DISORDERS.

Enclosed is a series of 7 questionnaires related to personality characteristics and family relationships of women in the 17 to 35 year age group. The study is intended to include women in the following four categories:

1. with anorexia nervosa
2. with bulimia nervosa
3. with diabetes
4. with none of the above

As you can see women with and without eating disorders are being invited to participate in this study. This will allow a comparison of the responses of all four groups of women, which may help in the understanding of how eating disorders develop.

This research has received approval from the [name of appropriate committee inserted here] Ethics Committee. The information gained is to be used for research in the Department of Psychology, University of Canterbury, Christchurch. Any information obtained about you from this research, including answers to questionnaires, will be kept confidential. In order to protect confidentiality, code numbers, not names, will be used on all forms and in all computer files. Your identity will not be revealed in any description or publication of this research.

Research of this nature is very valuable. Thus I would very much appreciate if you would take the time to complete these questionnaires. However, your participation is strictly voluntary and in no way associated with any treatment or studies you may be currently involved in. You have the right to refuse participation in this study or to withdraw at any time without prejudice to any present or future treatment.

Thank you.

*A. J. Archer*

Averill J. Archer (PhD student).

ph: (03) 3667-001 ext. 7197.

or, if collect, ph: (03) 348-8246

**CONSENT FORM****Women With Anorexia Nervosa**Reason for the project:

You are being invited to take part in a study that investigates personality characteristics and family relationships among young women. You are being asked to participate because you currently have problems with anorexia. By being in this study you may help us to understand how eating disorders develop.

Your tasks in this project:

You will be asked to complete a series of 7 questionnaires related to personality characteristics and family relationships.

Risks associated with participation:

There are *no* foreseen risks associated with participation in this study.

Confidentiality:

Any information obtained about you from this research, including answers to questionnaires, will be kept confidential. Any information forwarded to your general practitioner would be with your consent only. In order to protect confidentiality, code numbers, not names, will be used on all forms and in all computer files. Your identity will not be revealed in any description or publication of this research.

Voluntary participation:

You are free to refuse to participate in this study or to withdraw at any time. The investigator may also require that you withdraw from the study.

Time required: Approximately 1.5 - 2 hours.

Approval: This research has received approval from the [name of appropriate committee inserted here] Ethics Committee.

Name of researcher: A. J. Archer (Ph.D. student). ph: 366-7001 ext. 7197

I agree to participate in the project described above, on the understanding that if at any time I wish to withdraw from the project I may, without prejudice, do so. All information collected will be confidential as will the identity of participants.

Name ..... Signature of Participant .....

Date ..... Signature of Witness .....

## CONSENT FORM

### Women With Bulimia Nervosa

Reason for the project:

You are being invited to take part in a study that investigates personality characteristics and family relationships among young women. You are being asked to participate because you currently have problems with bulimia. By being in this study you may help us to understand how eating disorders develop.

Your tasks in this project:

You will be asked to complete a series of 7 questionnaires related to personality characteristics and family relationships.

Risks associated with participation:

There are *no* foreseen risks associated with participation in this study.

Confidentiality:

Any information obtained about you from this research, including answers to questionnaires, will be kept confidential. Any information forwarded to your general practitioner would be with your consent only. In order to protect confidentiality, code numbers, not names, will be used on all forms and in all computer files. Your identity will not be revealed in any description or publication of this research.

Voluntary participation:

You are free to refuse to participate in this study or to withdraw at any time. The investigator may also require that you withdraw from the study.

Time required: Approximately 1.5 - 2 hours.

Approval: This research has the approval of the [name of appropriate committee inserted here] Ethics Committee.

Name of researcher: A. J. Archer (Ph.D. student). ph: 366-7001 ext. 7197

I agree to participate in the project described above, on the understanding that if at any time I wish to withdraw from the project I may, without prejudice, do so. All information collected will be confidential as will the identity of participants.

Name ..... Signature of Participant .....

Date ..... Signature of Witness .....



**CONSENT FORM****Diabetic Controls**Reason for the project:

You are being invited to take part in a study that investigates personality characteristics and family relationships among young women. You are being asked to participate because you currently have insulin-dependent diabetes, and consequently the need for healthy food choices.

Your tasks in this project:

You will be asked to complete a series of 7 questionnaires related to personality characteristics and family relationships.

Risks associated with participation:

There are *no* foreseen risks associated with participation in this study.

Confidentiality:

Any information obtained about you from this research, including answers to questionnaires, will be kept confidential. Any information forwarded to your general practitioner would be with your consent only. In order to protect confidentiality, code numbers, not names, will be used on all forms and in all computer files. Your identity will not be revealed in any description or publication of this research.

Voluntary participation:

You are free to refuse to participate in this study or to withdraw at any time without prejudice to any present or future treatment. The investigator may also require that you withdraw from the study.

Time required: Approximately 1.5 - 2 hours.

Approval: This research has received approval from the [name of appropriate committee inserted here] Ethics Committee.

Name of researcher: A. J. Archer (Ph.D. student). ph: 667-001 ext. 7197

I agree to participate in the project described above, on the understanding that if at any time I wish to withdraw from the project I may, without prejudice, do so. All information collected will be confidential as will the identity of participants.

Name ..... Signature of Participant .....

Date ..... Signature of Witness .....

# CONSENT FORM

## Controls

### Reason for the project:

You are being invited to take part in a study that investigates personality characteristics and family relationships among young women. You are being asked to participate because you do not currently or in the past have an eating disorder. By being in this study you may help us to understand how eating disorders develop.

### Your tasks in this project:

You will be asked to complete a series of 7 questionnaires related to personality characteristics and family relationships.

### Risks associated with participation:

There are *no* foreseen risks associated with participation in this study.

### Confidentiality:

Any information obtained about you from this research, including answers to questionnaires, will be kept confidential. Any information forwarded to your general practitioner would be with your consent only. In order to protect confidentiality, code numbers, not names, will be used on all forms and in all computer files. Your identity will not be revealed in any description or publication of this research.

### Voluntary participation:

You are free to refuse to participate in this study or to withdraw at any time. The investigator may also require that you withdraw from the study.

### Time required: Approximately 1.5 - 2 hours.

Approval: This research has received approval from the [name of appropriate committee inserted here] Ethics Committee.

Name of researcher: A. J. Archer (Ph.D. student). ph: 667-001 ext. 7197

I agree to participate in the project described above, on the understanding that if at any time I wish to withdraw from the project I may, without prejudice, do so. All information collected will be confidential as will the identity of participants.

Name ..... Signature of Participant .....

Date ..... Signature of Witness .....

# **CONSENT FORM** **(FOR PARTICIPANTS IN THE AUCKLAND REGION)**

Title of project: Personality Characteristics and Family Relationships in Women With Eating Disorders.

Principal investigator: Averill Archer (Mrs)

Name of patient or subject: \_\_\_\_\_

English:	I wish to have an interpreter.	Yes	No
Maori:	E hiahia ana ahau ki tetahi tangata hei korero Maori ki ahau.	Ae	Kao
Samoan:	Oute mana'o e iai se fa'amatala upu.	Ioe	Leai
Tongan:	'Oku fiema'u ha fakatonulea.	Io	Ikai
Cook Island:	Ka inangaro au i tetai tangata uri reo.	Ae	Kar e
Niuean:	Fia manako au ke fakaaoga e tagata fakahokohoko vagahau.	E	Nak ai

I have heard and understood an explanation of the research project I have been invited to take part in. I have been given, and I have read, a written explanation of what is asked of me, and I have had an opportunity to ask questions and to have them answered. I understand that I may withdraw from the project at any time and that, if I do, my medical care will not be affected in any way. I understand that my consent to take part does not alter my legal rights.

I consent to take part as a subject in this research.

Signed: \_\_\_\_\_ subject

*In my opinion consent was given freely and with understanding.*

\_\_\_\_\_ witness name (please print)

\_\_\_\_\_ witness signature

Date : \_\_\_\_\_

## INFORMATION AND CONSENT FORMS FOR PARTICIPANTS IN PROJECTS

### PROJECT 1: QUESTIONNAIRES

If you are a woman and you identify yourself as Pakeha (NZ of European descent) you are invited to participate in the research project 'Perfectionism in Women' by completing the following two questionnaires. The aim of the project is to help develop an understanding of perfectionism among women. The results of the project may be published, but you may be assured of the complete confidentiality of the data gathered in this investigation: the identity of participants will not be made public. To ensure anonymity and confidentiality code numbers will replace names on all forms and in all computer files. You may at any time withdraw your participation, including withdrawal of any information you have provided. By completing the questionnaires, however, it will be understood that you have consented to participate in the project, and that you consent to publication of the results of the project with the understanding that anonymity will be preserved.

Project 2 is a follow-up to Project 1 and will involve only a small number of people who complete Project 1. Please turn over for information about Project 2.

From the findings of Project 1 some participants will be invited to volunteer as subjects in a second project. The aim is to explain in some detail your experience of perfectionism. The project would involve an individual interview expanding on your responses about perfectionism.

The interview, of approximately one hour, would be at a time convenient to both yourself and the researcher.

The people who volunteer for the interview will be paid the sum of twenty dollars (\$20.00) as compensation for their participation in the project.

There are *no* foreseen risks associated with participation in the project.

The results of the project may be published, but you may be assured of the complete confidentiality of the data gathered in this investigation: the identity of participants will not be made public. To ensure anonymity and confidentiality code numbers will replace names on all forms and in all computer files. Any records that could identify participants will be destroyed at the end of the study.

The project is being carried out by Averill Archer (PhD student), who can be contacted at home 3488246. She will be pleased to discuss any concerns you may have about participation in the project.

The project has been reviewed by the University of Canterbury Human Ethics Committee.

If you are willing to participate in Project 2 please read and sign the consent form below and provide your contact phone number.

.....

CONSENT FORM

I have read and understood the description of Project 2. On this basis I agree to participate as a subject in the project, and I consent to publication of the results of the project with the understanding that anonymity will be preserved. I understand also that I may at any time withdraw from the project, or decide not to commence the project. I may also withdraw any information I have provided.

Name (please use block capitals) .....

Signed ..... Date ..... Phone.....

**APPENDIX 3**

**ETHICS COMMITTEES'  
APPROVALS FOR THE STUDIES  
(copies of originals on the following nine pages)**

**Canterbury**  
**AREA HEALTH BOARD**

PRIVATE BAG  
CHRISTCHURCH, NEW ZEALAND.  
TELEPHONE 640-460  
FAX (03) 666-723

13 October 1992

Ms A. Archer  
Department of Psychology  
University of Canterbury  
Private Bag  
**CHRISTCHURCH**

Dear Ms Archer,

**PERFECTIONISM IN WOMEN WITH ANOREXIA NERVOSA AND BULIMIA  
NERVOSA AND ITS RELATION TO FAMILY ENVIRONMENT**


Please refer to your application to the Ethics Committee for the above named study.

I am pleased to advise that under her delegated authority, the Chairperson has approved of the study proceeding.

Could you please arrange to forward a report at the end of the research.

I wish you every success with your project.

Yours sincerely,



W.J. Perrott  
**SECRETARY**  
**ETHICS COMMITTEE**

Health Waikato Ltd  
Selwyn Street (P O Box 934)  
Hamilton, New Zealand



# HEALTH WAIKATO

*Manashita Te Ira Tangata  
Caring for Life*

Fax 07 839 4327  
Phone 07 839 4679

Date: 18/2/94	To: W.J. Perrott
Total pages:	Company: Ethics Committee. Canterbury
	Fax: 03 364 0438
	From: Sylvia Canoll

This message is intended for the use of the individual or entity to which it is addressed and may contain information that is **PRIVILEGED AND CONFIDENTIAL**. If the reader of this message is not the intended recipient or an employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone (collect) and return the original message to us by mail. Thank you.

## MESSAGE

RE: STUDY: PERFECTIONISM IN WOMEN  
WITH ANOREXIA NERVOSA AND BULIMIA  
NERVOSA AND ITS RELATION TO FAMILY  
ENVIRONMENT. MRS. A. ARCHER.

Study has now met requirements  
for approval from our Ethics  
Committee.

Sylvia





# North Health

4th Floor, 21 Pitt Street  
Private Bag 92522, Wellesley Street  
Auckland, New Zealand  
Telephone: 64-9-357 4300  
Facsimile: 64-9-357 4301

• Northern Regional Health Authority  
• Mana Hauora A Rohe O Te Raki

93/196 Committee B

3 March 1994

Mr Wynton Perrott  
Ethics Committee (Canterbury)  
P O Box 1600  
CHRISTCHURCH

Dear Mr Perrott

**STUDY PERFECTIONISM IN WOMEN WITH ANOREXIA NERVOSA AND  
BULIMIA NERVOSA AND ITS RELATION TO FAMILY ENVIRONMENT  
PROPOSAL 93/196, COMMITTEE B**

The above proposal was considered by Ethics Committee B of the Northern Regional Health Authority at its meeting of 23 February 1994.

Members ask that:

- (i) the Information Sheet for Auckland use the (attached) sentence re availability of the Patient Advocate Service
- (ii) the Auckland consent form be used (additional information in the Canterbury form should be transferred to the Subject Information Sheet)

Members also concur with your comments (in your letter of 13 August 1992), amended for Auckland as appropriate. Members also stress that the identification process should be as stated in the Subject Information Sheet (i.e. a code will be used to identify participants, not names)

With the provisos noted above, the study is APPROVED for Auckland until 3 March 1995.

Note: Would you please let me know if any hospitals or clinics are to be involved in this study.

Yours sincerely

Beverley Carey  
Secretary

ETHICS COMMITTEES

*cc to A. Drew  
Department of Psychiatry  
University of Canterbury*

7.3.94

# MANAWATU WANGANUI ETHICS COMMITTEE

P O Box 2056  
Palmerston North  
Chairperson: Bibby Plummer

Phone: (06) 350-8943  
Fax: (06) 351-6669  
Secretary: Deborah Bell

## CENTRAL REGIONAL HEALTH AUTHORITY

DB936

FILE: 01/94

25 February 1994

Mr Wynton Perrot  
Secretary  
Canterbury Ethics Committee  
P O Box 1600  
CHRISTCHURCH

Dear Wynton

### **ETHICS REGISTER 01/94 - PERFECTIONISM IN WOMEN WITH ANOREXIA NERVOSA & BULIMIA NERVOSA & ITS RELATION TO FAMILY ENVIRONMENT**

The Manawatu & Wanganui Ethics Committee reviewed the above proposal at its meeting on 21 February 1994.

I am pleased to advise you that full Ethics Committee approval is given for Mrs Averill Archer's proposal to continue to proceed in this area, which is considered to be very worthwhile. Members did however make the following comments:

1. The researcher's response to Question 11.2 of the Application form was noted. Members considered the exclusion of subjects not raised in two parent families could bias the study.
2. Concern was expressed that this study was being conducted nationally upon the approval of one person only. (This Committee has a fast-tracking process whereby a sub-committee of two or three members, including the Chairperson, review the study, and any decisions are ratified by the full Committee at the next meeting).

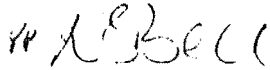
I would advise that the Ethics Committee makes decisions on ethical issues only. We note this study is to be carried out in the Manawatu and Wanganui areas. If the researcher intends to involve staff or patients of either MidCentral Health, or Good Health Wanganui they are required to obtain written approval from the Chief Executive Officer of the appropriate CHE for this study to commence. If Mrs Archer requires any finances and/or resources for this proposal she is required to inform the Chief Executive Officer accordingly.

Please note, this study is approved for a two year period in the Manawatu & Wanganui area only, and re-approval is required after that time.

Finally, the Ethics Committee requires Mrs Archer to submit a progress report on the study within twelve months, and at the completion of the study a copy of any report and/or publication for its records. Could Mrs Archer please notify the Committee if the study is abandoned or the protocol changed in any way.

We wish Mrs Archer every success with this proposal.

Yours sincerely

A handwritten signature in dark ink, appearing to read "Bibby Plummer". The signature is written in a cursive, flowing style.

Bibby Plummer  
**ETHICS COMMITTEE CHAIRPERSON**

# MIDCENTRAL HEALTH

*Office of the Group Manager  
Mental Health & Intellectual Disability Services  
Company Office, Heretaunga Street, Palmerston North.  
Telephone (06) 350 8965 : Fax (06) 350 8768*

mb1300

23 March 1994

MidCentral Health Limited  
Phone (06) 355 0999  
Fax (06) 355 0516  
PO Box 2056  
Heretaunga Street  
Palmerston North  
New Zealand

Mrs Averill Archer  
Department of Psychology  
University of Canterbury  
Private Bag 4800  
CHRISTCHURCH

Dear Mrs Archer

Re: Correspondence dated 8 March 1994

I have been asked by the Chief Executive Officer, Margot Mains to respond to the above.

Given that your proposed research has Ethics Committee approval, and that there is relatively little involvement of our staff, I believe it appropriate to indicate my approval for you to invite our clients to become participants.

Best wishes with your endeavours, I look forward to hearing of the results of your study in due course.

Yours sincerely



Keith Roffe  
Group Manager  
MENTAL HEALTH & INTELLECTUAL DISABILITY SERVICES

cc C.E.O.

File: E70 - 5  
Doc: 30142

# WELLINGTON ETHICS COMMITTEE

All Correspondence to the Secretary :  
Room 434, Fourth Floor, Primary Health Centre  
Wellington Hospital, Private Bag 7902  
Wellington South

Phone: 3855-999 x 5185 Fax: 3855-840

CENTRAL  
REGIONAL  
HEALTH  
AUTHORITY

6 July 1994

Mrs Averill Archer  
Department of Psychology  
University of Canterbury  
Private Bag 4800  
CHRISTCHURCH

Dear Mrs Archer

94/7 - Perfectionism in women with anorexia nervosa and bulimia nervosa and its relation to family environment

I refer to your letter dated 15 June and advise that you have met our Committee's requirements. You have final Ethics Committee approval from the Wellington Ethics Committee.

It is a condition of Ethics Committee approval that we receive a brief progress report on the study no later than July 1995.

We wish you well with your research.

Yours sincerely



Alison Douglass  
CHAIRPERSON

c.c. Wynton Perrott

Professor R. H. Stoothoff  
Department of Philosophy & Religious Studies  
University of Canterbury  
Christchurch, New Zealand  
Telephone: 3642599; Fax: 3642007  
Email: PHIL008@csc.canterbury.ac.nz

2 December 1993

Mrs Averill Archer  
Department of Psychology

Dear Mrs Archer,

Thank you for sending a copy of the application which the AHB Ethics Committee has approved. As I mentioned in our telephone conversation, I am quite sure that research proposals approved by this committee will not also require approval of the University committee. But we shall need to be informed about such proposals - in just the way that you have done.

Yours sincerely,

